The Measure of Economic Freedom

Measuring Economic Freedom

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Introduction

ECONOMIC FREEDOM IS HETEROGENEOUS AND extremely complex. No doubt, many believe that it is impossible to quantify. In a sense, this is clearly true—there are so many facets of economic freedom that it is an impossible task to quantify fully all of its dimensions. However, we believe that important ingredients of economic freedom can be quantified. The purpose of this paper is to construct an index which will provide valuable information on the status of economic freedom across countries and time periods.

The paper is divided into five sections. Part I briefly discusses our concept of economic freedom. Part II analyzes how one might measure economic freedom in four major areas: (1) time-dimension exchange, (2) size of government and freedom of domestic exchange, (3) "takings" and discriminatory taxation, and (4) freedom of international exchange. Part III briefly explains the construction of an index of economic freedom which we calculated for 79 countries. Part IV presents our results for 1975, 1980, 1985, and 1988-89. Finally, the concluding section considers some of the limitations of the index.

What is Economic Freedom?

A short reasonably accurate definition of economic freedom is that it exists when persons, and their rightfully-owned property (that is, "things" acquired without the use of force, fraud, or theft) are protected from assault by others. An individual's private ownership right includes the right to trade or give rightfully-acquired property to another. Thus, protection from invasion by others and freedom of exchange are the cornerstones of economic freedom.[1]

Of course, short definitions often raise questions. Some may ask, "What constitutes an assault?" "Who are the others who qualify for such a role?" "Does private ownership mean that you can use your property to do anything you want?" Briefly, we will seek to clarify these points.

What constitutes an assault, or a trespass, or a violation of private property? The most important property right possessed by a human being is the right to one's person. This right is violated when others invade or infringe upon one's person without consent. Thus, murder, kidnapping, assault and battery, and rape are violations of one's property right to his or her person. In like manner, violations of one's property right to physical objects takes place when others, without consent, invade or otherwise infringe upon an individual's passive use of his or her property. Therefore, actions such as theft, arson, and trespass are violations of private ownership rights. So, too, are restrictions upon the sale or use of one's property, as long as the use of the property is compatible with the rights of others.

The "others" who can qualify for a role as a denigrator of economic freedom must be human beings. If private property rights are destroyed as

the result of storm, lightening, wild animals, or "acts of God," this is not a violation of economic freedom. Similarly, if people are poor because of ignorance (the cave men), their unhappy state cannot be characterized as a violation of economic freedom. Rather, they can properly be seen as lacking in wealth. Only purposeful human beings can deny economic freedom to other people.

The economic freedom of an individual is violated as the result of both "takings" by private criminals and "takings" via the political process. Discriminatory taxation—that is, taxation for the purpose of providing goods and transfer payments *to others*—is a taking, just as stealing is a taking (Epstein, 1985). It makes no difference that we refer to one as a "transfer" and the other as "theft." In terms of economic freedom, the impact on the victim is the same. In both cases, goods are taken from one individual without compensation and transferred to another. Similarly, regulatory activities such as price controls, property-use restrictions, and trade restrictions often involve the taking from one group with the intent of providing benefits to another. Like private criminal activity, these, too, are a violation of economic freedom.

Does this mean that individuals are free to use their private property in any way that they would like? No, the use rights of a private owner are limited by the ownership rights of other private owners. Owner A cannot use his property in a manner that invades or infringes upon the property rights of B. If A's violation of B's property right damages B, A is liable for the damage. Sometimes these issues are quite complex. If an airplane flies 20 feet over your roof, bursting your eardrums and shaking your dwelling to bits, this is clearly a private property right violation; but if it flies overhead at 20,000 feet, it is clearly not. You will probably not even be aware of it.[2] Similarly, a light shined on your house with the power of one lumen is invisible to the naked eye, and constitutes no violation of your rights. In contrast, a super powerful beam focused on your house could incinerate it and everything within.[3] In the former case, your private rights were not violated, but in the latter case they clearly were abridged. The proper boundary of private property rights is somewhere between these two extremes. One of the most important functions of a legal system is the determination of precisely where the boundary line should be drawn in the difficult cases. However, the presence of difficult cases does not negate the general principle: private property provides individuals with the freedom

to act as long as they do not invade or infringe upon the private property of others.

Economic freedom can also be viewed within the framework of negative rights and positive rights. Negative rights protect people against others who would invade and/or take what does not belong to them. Since negative rights are nonaggression rights, all citizens can simultaneously possess negative rights.[4] In order to maintain negative rights, all people have to do is to refrain from initiating aggression against others and their property. In contrast, positive rights, such as a "right" to food, clothing, medical services, housing, or a minimal income level impose "forced labor" requirements on others. If A has a right to housing, for example, this would imply that A has a right to force others to provide the housing. But A has no right to the labor of others. Thus, A cannot possibly have a right to housing and other things that can only be supplied if they are provided by other people. Forced (slave) labor is the other side of positive rights. If a positive right is going to be achieved, some people will have to give up their possessions to others. In reality, positive rights are disguised demands for the forced transfers of income and wealth from some to others. Since positive rights force some to provide labor to others, they are clearly inconsistent with economic freedom.

It would be an impossible task to acquire detailed information for various countries that fully reflects the dimensions and complexity of economic freedom. However, the core of economic freedom is (a) the protection of private ownership rights (including one's property right to his or her own labor) to things acquired without the use of force, fraud, and theft, (b) freedom of personal choice with regard to the use of one's resources, and (c) freedom of exchange. It is possible to identify major areas and quantify important indicators of economic freedom in these areas. This is precisely what we seek to do in this paper.

Quantifying Economic Freedom in Four Major Areas

Recognizing that the protection of private property, freedom of exchange, and freedom of choice are the core of economic freedom, we have sought to quantify economic freedom in four major areas: (1) time-dimension

exchange, (2) voluntary market exchange, (3) takings and discriminatory taxation, and (4) exchange across national boundaries. Of course, this list of components of economic freedom is not exhaustive. In some cases, data limitations precluded our inclusion of other categories. In other instances, the availability of data has influenced our choice of variables used to quantify an element of economic freedom.[5] However, we do believe that the four major components included in our analysis capture important dimensions of economic freedom. We also believe that the variables utilized to measure the components are reasonably good indicators of the presence or absence of economic freedom across countries within the four major categories. Let us now turn to the major components of our index and the variables used as indicators of economic freedom in each area.

Restraint of Time Dimension Exchange—Instability of Money and Prices

Monetary instability inhibits freedom of exchange involving time-dimension contracting (for example, bonds, mortgages, and credit purchases) and thereby reduces economic freedom. Unexpected changes in the money supply (and price level) alter the terms of time-dimension contracts. Thus, monetary instability increases the risk accompanying time-dimension contracts. Potential gains from exchange are lost as the result of this risk.[6]

The following variables were used to quantify monetary stability: (a) the standard deviation of the annual growth rate of the money supply during the last five years, and (b) the standard deviation of the annual inflation rate during the last five years. Of course, monetary stability and price stability are linked—variability in money growth creates variability in the inflation rate. However, some countries use price controls which may temporarily reduce the *measured* rate of inflation. Thus, we include both a price stability measure, as well as a monetary stability measure. In principle, a country could have a rapid increase in the money supply *and* the price level without having much variation in the inflation rate or growth rate of the money supply. In reality, however, that is seldom the case. Countries with low rates of money growth and inflation also tend to have more stability in these variables. Correspondingly, countries with high rates of money growth and inflation tend to exhibit substantially more variability. Thus, while our measures focus on variability, monetary stability (and price

stability) is highly correlated with low rates of monetary growth (and low rates of inflation).

Each country will be ranked on a scale ranging from 0 to 10 for this component, as well as for all other components of our index. Countries with stable monetary policies and stable inflation rates are rated high (near the 10 end of the scale). In contrast, countries with unstable money and inflation are given low ratings (near the zero end of the scale).

Size of government—the proportion of resources allocated via coercion rather than market exchange

Milton Friedman consistently reminds us that government expenditures are a better measure of the size (and cost) of government than tax revenues. The real cost of government—the proportion of output allocated by politicians and other central planners rather than by those who earn it—stems from government spending, not just taxes. There are two broad functions of government that are consistent with economic freedom. First, there is the protective function of government. Government expenditures that protect the "life, liberty, and property" of individuals against the invasion of intruders, both domestic and foreign, are perfectly consistent with economic freedom. Second, the theory of public goods explains why certain types of activities (those for which it is difficult to restrict consumption to those who pay for the good) cannot easily be provided through market transactions. Thus, government provision of public goods may also be consistent with economic freedom. These two functions correspond to what James Buchanan (1975) conceptualizes as the protective and productive state.

When government moves beyond these protective and productive functions into the provision of private goods, it restricts consumer choice and economic freedom. Most modern governments are heavily involved in the rechannelling of income toward the production of some commodities and away from others, operation of businesses, the protection of government businesses from the discipline of competition, the forcing of some to pay for goods that benefit others, the imposition of price controls, and numerous other expenditures and regulatory activities that have nothing to do with either the protection of property rights nor the provision of public goods.

Given the breadth and magnitude of these activities, precise quantification of these activities is an impossible task. However, we have obtained data on three important indicators of economic freedom in this area. First, data on total government expenditures (including both central and local governments) are available. In general, as government expenditures rise relative to GNP, governments become more heavily involved in activities that do violence to economic freedom—activities beyond the protective and productive functions of government. Therefore, when total government expenditures of a country are large (and market expenditures small) as a share of GNP, the country is given a low rating. Similarly, countries with small government expenditures (and a relatively large market sector) are rated high.

Second, we have also assembled data on (a) the number of nonfinancial central government enterprises and (b) the representation of central government enterprises in 10 major industries (for example, steel, hotels, oil refinery, and airlines) where the argument for government production is weak. Countries with only a small number of government enterprises are rated highly. Similarly, countries with only a few government enterprises in the ten industries where the case for government provision is weak are given a high rating. In contrast, countries with a large number of government enterprises and government enterprises in many industries where markets work quite well are given a low rating.

The inclusion of the government enterprise data helps to correct a major deficiency of government expenditures as a measure of the size of government. The government expenditure variable substantially understates the size of government when government-operated enterprises are widespread. To the extent that the expenditures of government enterprises are covered by sales revenue, they generally do not appear in the government budget. The sales of the enterprises contribute to private consumption in the national income accounts. Only the subsidy (or revenue surplus) enters into the government's financial accounts. Given this methodology, government enterprises exert little impact on budgetary expenditures. Thus, since government enterprises generally operate in a protected, noncompetitive environment, it is vitally important to include a variable that will, at least partially, capture the contribution of government enterprises to the size of the government.

Third, price controls are an important regulatory area where some data are available (for the late 1980s). When the prices of goods and service are determined almost exclusively by market forces, a country is given a high rating. In contrast, countries with widespread use of price controls are rated low.

Denial of the right to private ownership—takings and discriminatory taxes

Governments can (and should) protect individuals against intruders who would take items that belong to others. However, governments themselves are often used as a vehicle for plunder. Often governments tax some in order to provide transfers or subsidies to others. They sometimes levy high marginal tax rates which deny individuals the fruits of their labor. Conscription is sometimes used to deny directly various segments of the population the property right to their labor. Such takings and discriminatory taxes are inconsistent with economic freedom.

Economically free people are permitted to reap the fruits of their labor. Income transfers, whether from rich to poor (or as is often the case from poor to rich), from men to women, or from one race group to another, are per se violations.[7] From an aesthetic point of view, it may make some difference whether funds are taken from people in order to give them to the poor rather than to the rich. However, from the perspective of economic freedom, it makes not one whit of difference. In essence, the use of force to take someone else's property is theft. It makes no difference what the thief intends to do with the stolen goods. Neither does it matter whether the theft takes place via the ballot box, or more directly as in the style of an armed robber. Thievery is thievery, regardless of motive or method; and it is a clear violation of economic freedom.

High marginal tax rates are also a form of taking. They take most of the labor and other earnings of people without even the pretense of providing them with proportional compensation (for example, government services) in return. To the extent that they raise revenue, they force some people to pay for services provided to others. Generally, however, high marginal tax rates are a very inefficient form of raising government revenue, since people will often reduce their work effort when a large proportion of their earnings is taxed away. Thus, high marginal tax rates impose an additional

cost (and an additional loss of economic freedom) over and above the revenues transferred to the government. Perhaps the following example will help illustrate this point. Suppose that the government threw everyone who earned more than $100,000 per year in jail for six months. In essence, this is a form of a high marginal tax rate. A tax scheme like this would substantially reduce economic freedom over and above the revenue it generated for the government. In fact, it probably would not raise much revenue. Nonetheless, the impact on economic freedom would be substantial. So it is with high marginal tax rates—they impose a discriminatory cost on people over and above the cost of the revenue that they generate.

Conscription is perhaps the single most discriminatory tax that is widely used by modern governments. Some persons are drafted in order to provide labor services used to supply a government-produced good—national defense—that benefits all. Of course, protection of the "lives, liberties, and property" of citizens is a central function of government. But the cost of this protection should be imposed on all citizens. Singling out a specific group (for example, young men or young women) to pay for something that benefits all is a clear "taking." The military draft falls into this category and, as such, it is a clear violation of economic freedom.

In an effort to quantify the magnitude of takings and discriminatory taxes, we developed three variables: (a) income transfers and business subsidies as a percent of GNP, (b) the maximum marginal tax rate and the income threshold at which it is applied, and (c) the number of military conscriptees per 1000 population. Countries with a small transfer/subsidy sector, low marginal tax rates (and/or high income thresholds for the top marginal rate), and a voluntary military force (or only a small number of conscriptees per 1000 population) are awarded high ratings in each of these categories. In contrast, a large transfer/subsidy sector, high marginal tax rates (that take effect at a low income threshold), and a large proportion of military conscriptees results in a low rating.

Restraint of International Trade

Numerous policies ranging from tariffs and quotas to exchange rate controls and limitations on foreign investments reduce the economic freedom of citizens to exchange with trading partners in another country. Tariff rates retard exchange across national boundaries. The higher the tariff rate the greater the restraint of trade. Non-tariff barriers are also an important

source of restraint on international trade. Unfortunately, the non-tariff trade restraints are numerous, complex, and heterogeneous. Given the current state of the data, direct measurement of these non-tariff barriers is virtually an impossible task.

We developed two variables that provide some insight on the magnitude of trade restrictions. First, tax revenue from tariffs and export taxes were derived. These taxes on international trade can be used to derive an average (discriminatory) tax rate imposed on international trade. Countries with a low average tax rate (international trade tax revenue divided by the value of exports plus imports) on international trade were given a high rating. In contrast, when the average international trade tax rate was high, the country was assigned a low rating.

Second, we developed a variable designed to provide an indirect measure of the extent that non-tariff barriers restrain international trade. We utilized the following equation to derive an expected size of the trade sector for each country:

$$T_c = f\,(GNP_c,\ Pop_c,\ t_c)$$

where

T_c represents the expected size of the trade sector (one-half of exports plus imports divided by GNP; all variables were measured in the domestic currency of each country),

GNP_c is the country's real GNP per capita measured in U. S. dollars,

Pop_c is the logarithm of the country's population, and

t_c indicates the country's average tax rate on imports and exports.

If a country is using quotas, exchange rate controls, tariffs so high that they exclude entry of certain goods, and other regulatory devises to retard international trade, one would expect that the actual size of the country's trade sector would be small *relative to other countries of similar size, income level, and average tariff rate*. Therefore, if the actual size of a country's trade sector is small relative to the expected size (given the country's population, GNP, and average tariff rate), this is indirect evidence that the non-tariff

trade barriers of the country are high. Such countries are rated low on our one to ten rating scale. On the other hand, countries with low non-tariff trade barriers will tend to have a large actual trade sector relative to what would be expected. When this is the case, the country is given a high rating.

Construction of the Index of Economic Freedom

Table 1 summarizes the data included in the construction of our indexes. We constructed indexes for 1975, 1980, 1985, and the late 1980s. As Table 1 illustrates, we were able to obtain the required data for only ten of the eleven variables in 1975, 1980, and 1985 (the data for the price control variable were unavailable during these years). All eleven variables were included in the 1988-89 index. Appendix 1 describes each of the eleven variables and indicates the data source used for their derivation.[8]

The actual data for each variable in 1985 was arranged from the highest (most consistent with economic freedom) to lowest and divided into eleven intervals of equal size. Therefore, the 9.09 percent of the countries with the most favorable rating were assigned a rating of ten. The next 9.09 percent of the countries were assigned a nine, and so on. Thus, the number of countries receiving any given numerical rating (0 to 10) was roughly equal in 1985.[9]

Using the 1985 base year data, the intervals of the actual data that corresponded to each of the zero to ten ratings were also derived. These intervals were then used to assign the appropriate rating for each variable during the other years. Thus, the countries in aggregate can either improve (or regress), depending on how their ratings in other years compared with the 1985 base year.

After the actual data for each variable were converted to a zero to ten scale, we had to decide how the variable would be weighted in the calculation of a summary index. Table 1 indicates the weight that we utilized for the major categories (and subcategories) in our calculations. When the price control data were unavailable during 1975, 1980, and 1985; the other sub-components in the "size of government" category were given proportionally larger weights. Thus, when constructing the summary index in 1975, 1980, and 1985, the "total government expenditures" variable was

Table 1: Tabular Presentation of the Components of the Index
1975, 1980, 1985, and Late 1980s

Basic Weight	Variable Included In Index	Year (X indicates data were available during the year)			
		1975	1980	1985	Late 1980s
22.5%	I. Money and Prices				
(11.25)	A. Standard deviation of the Annual Growth Rate of the Money Supply (last five years)	X	X	X	X
(11.25)	B. Standard deviation of the Annual Inflation Rate (last five years)	X	X	X	X
30.0%	II. Size of Government				
(10.0)	A. Total Government Expenditures as a Percent of GNP	X	X	X	X
(10.0)	B. Nonfinancial Central Government Enterprises				
(5.0)	i. Total Number	X	X	X	X
(5.0)	ii. Government Enterprise in Designated Industries[a]	X	X	X	X
(10.0)	C. Price Controls-Portion of Economy Subject to Price Controls				X
25.0%	III.Takings and Discriminary Taxation				
(8.33)	A. Transfers and Subsidies as a Percent of GNP	X	X	X	X
(8.33)	B. Top Marginal Tax Rate (and Income Threshold at which it applies)	X	X	X	X
(8.33)	C. Conscripts per 1,000 Population	X	X	X	X

Table 1: Tabular Presentation of the Components of the Index 1975, 1980, 1985, and Late 1980s					
Basic Weight	Variable Included In Index	Year (X indicates data were available during the year)			
		1975	1980	1985	Late 1980s
22.5%	IV. Restraint of International Trade				
(11.25)	A. Taxes on International Trade as a Percent of Exports and Imports	X	X	X	X
	B. Actual Size of the Trade Sector Compared to the Expected Size	X	X	X	X

[a]The ten designated industries were agriculture, airlines, radio and television broadcasting, construction material manufacture (e.g., steel or aluminium), chemicals and fertilizers, fishing or mining, hotels and/or theaters, energy production, pharmaceuticals, and real estate (including housing).

given a 15 percent weight (rather than 10 percent) and each of the two nonfinancial central government business enterprise variables were given a weight of 7.5 percent (rather than 5 percent) so that the total weight assigned to the size of government category would remain at 30 percent. If a country's data *for a major category* were unavailable during a year, the country was not rated during that year.

Presentation of Results

Table 2 presents the summary index rating and the rating for each of the four major components that comprise the summary index. Several interesting points are observable from the data of Table 2. First, the data allows one to pinpoint the areas of strength and weakness for each country. In some cases, they are quite revealing. For example, consider the data on monetary and price stability (I) and trade restrictions (IV) for Austria, Belgium, Germany, Netherlands, and the United Kingdom. In general, these countries ranked quite high (usually 8 or better) in the areas of monetary/price stability and free trade. However, the domestic economies

of these countries are generally characterized by large government expenditures, high taxes, large transfer sectors, and use of price controls. Thus, they ranked low with regard to size of government (II) and takings and discriminatory taxation (III).

In contrast with most developed countries of Europe, many less developed countries ranked quite well in the areas of size of government (II) and takings and discriminatory taxation (III), but low in the areas of monetary stability and free trade. Costa Rica, Guatemala, Haiti, Honduras, Uruguay, Bangladesh, and Ghana illustrate this pattern.

Table 2 also illustrates why the summary index is low for Latin countries, including Argentina, Brazil, Mexico, Peru, and Venezuela. The economies of these countries are characterized by monetary instability, large government expenditures, numerous government enterprises, price controls, and trade restrictions. Across the board, the policies of these countries are in conflict with economic freedom.

Finally, it is comforting to note that countries such as the United States, Germany, Switzerland, and Japan (particularly in recent years) that have a reputation for monetary stability rank quite high in this area. In contrast, countries such as Argentina, Bolivia, Brazil, Peru, Israel, and Mexico (in the 1980s) rank at the very bottom in the area of monetary stability.

What impact does economic freedom have on the growth rate of GNP? Comprehensive analysis of the issue is a topic for another paper. However, we will briefly address the issue. Table 3a presents data on the growth rate of per capita GNP during the 1975-1980 period for the fifteen countries which had highest (and lowest) economic freedom ratings during this period. Several of the fifteen lowest rated countries—for example, Italy, Iceland, Chile, and Egypt—had impressive growth rates during the late 1970s. On the other hand, several countries with a high economic freedom rating had unimpressive growth rates. Nonetheless, the average annual growth rate of the fifteen top-rated countries was 3.74 percent, compared to 1.33 percent for the bottom-rated countries.

Table 2: Index Ratings by Major Category and Summary Rating, 1975, 1980, 1985, 1988-89.

Country	#	Year	I. (22.5%)	II. (30.0%)	III. (25.0%)	IV (22.5%)	Summary Rating
UNITED STATES	1	1975	9.0	6.5	5.0	7.0	68.00
UNITED STATES	1	1980	10.0	6.5	4.7	6.5	68.29
UNITED STATES	1	1985	8.5	6.5	6.3	6.5	69.08
UNITED STATES	1	1988	8.5	7.0	7.3	7.0	74.21
CANADA	2	1975	5.5	3.8	6.7	6.0	53.79
CANADA	2	1980	8.5	3.8	6.3	6.0	59.71
CANADA	2	1985	4.5	3.3	5.3	6.5	47.83
CANADA	2	1988	6.5	5.0	6.3	6.5	60.08
AUSTRALIA	3	1975	4.0	6.0	5.7	3.5	49.04
AUSTRALIA	3	1980	8.0	6.0	5.3	3.5	57.21
AUSTRALIA	3	1985	8.0	4.8	5.0	3.5	52.63
AUSTRALIA	3	1988	6.5	5.0	5.7	3.5	51.67
JAPAN	4	1975	3.5	7.3	7.0	6.5	61.75
JAPAN	4	1980	8.0	6.8	7.0	6.0	69.25
JAPAN	4	1985	9.5	7.0	7.3	6.0	74.21
JAPAN	4	1988	10.0	6.7	7.3	5.5	73.21
NEW ZEALAND	5	1975	4.0	5.0	5.3	4.0	46.33
NEW ZEALAND	5	1980	6.0	5.0	4.0	4.0	47.50
NEW ZEALAND	5	1985	6.5	4.5	3.3	4.5	46.58
NEW ZEALAND	5	1988	3.5	5.7	5.3	3.5	46.08
AUSTRIA	6	1975	8.0	1.5	4.3	6.0	46.83
AUSTRIA	6	1980	8.5	1.5	4.0	6.5	48.25
AUSTRIA	6	1985	9.0	1.5	2.7	7.0	47.17
AUSTRIA	6	1988	10.0	2.7	4.0	6.5	55.13
BELGIUM	7	1975	7.0	5.3	1.7	9.5	57.04
BELGIUM	7	1980	9.0	4.3	2.7	9.5	61.04
BELGIUM	7	1985	10.0	4.3	2.0	10.0	62.75

Table 2: Index Ratings by Major Category and Summary Rating, 1975, 1980, 1985, 1988-89.							
Country	#	Year	I. (22.5%)	II. (30.0%)	III. (25.0%)	IV (22.5%)	Summary Rating
BELGIUM	7	1988	9.5	3.5	2.7	9.5	59.92
DENMARK	8	1975	5.5	2.0	2.7	5.5	37.42
DENMARK	8	1980	9.5	2.5	4.0	5.5	51.25
DENMARK	8	1985	5.0	2.5	4.0	6.5	43.38
DENMARK	8	1988	6.0	4.2	4.0	5.5	48.38
FINLAND	9	1975	4.5	4.0	2.7	4.5	38.92
FINLAND	9	1980	6.5	4.3	2.0	5.0	43.63
FINLAND	9	1985	8.5	4.0	2.3	4.5	47.08
FINLAND	9	1988	7.0	4.2	2.3	4.5	44.21
FRANCE	10	1975	8.5	3.0	3.0	7.0	51.38
FRANCE	10	1980	10.0	5.5	2.7	7.0	61.42
FRANCE	10	1985	7.5	5.0	1.7	7.0	51.79
FRANCE	10	1988	7.5	5.2	2.7	7.0	54.79
GERMANY	11	1975	8.5	3.3	4.0	8.5	58.00
GERMANY	11	1980	8.5	3.3	4.3	8.5	58.83
GERMANY	11	1985	10.0	2.5	3.0	9.0	57.75
GERMANY	11	1988	10.0	4.8	4.0	9.0	67.25
ICELAND	12	1975	3.5	3.8	6.5	1.5	38.75
ICELAND	12	1980	2.0	4.3	6.5	2.0	38.00
ICELAND	12	1985	1.0	3.8	5.5	2.5	32.88
ICELAND	12	1988	3.0	4.3	10.0	0.0	44.50
IRELAND	13	1975	5.0	3.5	4.0	6.5	46.38
IRELAND	13	1980	5.0	3.3	4.3	7.5	48.71
IRELAND	13	1985	6.0	2.8	3.3	8.5	49.21
IRELAND	13	1988	8.5	4.2	3.7	7.5	57.67
ITALY	14	1975	5.5	1.0	3.3	7.0	39.46
ITALY	14	1980	8.0	1.0	3.3	6.5	43.96

Table 2: Index Ratings by Major Category and Summary Rating, 1975, 1980, 1985, 1988-89.

Country	#	Year	I. (22.5%)	II. (30.0%)	III. (25.0%)	IV (22.5%)	Summary Rating
ITALY	14	1985	7.5	0.8	2.0	7.0	39.88
ITALY	14	1988	9.0	2.2	3.7	6.0	49.42
NETHERLANDS	15	1975	6.5	4.5	2.7	8.5	53.92
NETHERLANDS	15	1980	8.5	4.0	2.3	9.5	58.33
NETHERLANDS	15	1985	8.5	3.5	2.3	10.0	57.96
NETHERLANDS	15	1988	5.5	4.7	2.0	9.5	52.75
NORWAY	16	1975	9.0	1.5	1.3	7.5	44.96
NORWAY	16	1980	7.5	2.0	0.7	8.0	42.54
NORWAY	16	1985	6.0	1.0	1.7	7.5	37.54
NORWAY	16	1988	5.0	2.0	2.0	6.5	36.88
SPAIN	17	1975	7.5	4.0	4.0	4.0	47.88
SPAIN	17	1980	6.5	2.5	2.7	4.0	37.79
SPAIN	17	1985	9.0	1.5	2.0	5.0	41.00
SPAIN	17	1988	8.5	3.0	3.0	5.0	46.88
SWEDEN	18	1975	8.5	2.0	2.0	5.5	42.50
SWEDEN	18	1980	8.0	1.5	1.0	5.5	37.38
SWEDEN	18	1985	5.0	1.0	0.7	6.5	30.54
SWEDEN	18	1988	8.5	2.7	0.7	6.0	42.29
SWITZERLAND	19	1975	8.0	7.0	5.0	5.0	62.75
SWITZERLAND	19	1980	6.5	7.0	5.3	6.5	63.58
SWITZERLAND	19	1985	8.5	6.5	6.3	6.0	67.96
SWITZERLAND	19	1988	9.0	7.0	6.7	6.0	71.42
UNITED KINGDOM	20	1975	4.5	3.5	6.7	8.0	55.29
UNITED KINGDOM	20	1980	6.5	4.0	4.3	7.5	54.33
UNITED KINGDOM	20	1985	8.0	3.3	4.7	8.5	58.54
UNITED KINGDOM	20	1988	9.5	5.3	6.0	8.0	70.38
ARGENTINA	21	1975	0.0	6.0	3.3	1.5	29.71

Table 2: Index Ratings by Major Category and Summary Rating, 1975, 1980, 1985, 1988-89.

Country	#	Year	I. (22.5%)	II. (30.0%)	III. (25.0%)	IV (22.5%)	Summary Rating
ARGENTINA	21	1980	0.0	5.0	4.0	2.0	29.50
ARGENTINA	21	1985	0.0	2.8	3.7	1.5	20.79
ARGENTINA	21	1988	0.0	2.7	7.0	1.5	28.88
BOLIVIA	22	1975	1.5	10.0	7.0	3.5	58.75
BOLIVIA	22	1980	2.0	7.5	6.0	1.0	44.25
BOLIVIA	22	1985	0.0	5.3	6.7	5.0	43.67
BOLIVIA	22	1988	0.0	5.8	9.0	5.0	51.00
BRAZIL	23	1975	5.0	4.8	5.7	6.0	53.17
BRAZIL	23	1980	1.0	4.8	5.7	5.5	43.04
BRAZIL	23	1985	0.0	2.0	4.7	6.0	31.17
BRAZIL	23	1988	0.0	0.7	7.3	5.5	32.71
CHILE	24	1975	0.0	6.3	1.7	4.5	33.04
CHILE	24	1980	0.0	7.5	4.3	4.0	42.33
CHILE	24	1985	4.0	6.0	3.3	4.5	45.46
CHILE	24	1988	3.0	7.0	4.3	5.5	50.96
COLOMBIA	25	1975	4.0	6.8	7.0	2.5	52.38
COLOMBIA	25	1980	7.0	6.8	5.7	2.0	54.67
COLOMBIA	25	1985	7.5	6.5	7.0	2.0	58.38
COLOMBIA	25	1988	5.5	6.3	8.3	2.5	57.83
COSTA RICA	26	1975	3.5	9.3	7.3	3.5	61.83
COSTA RICA	26	1980	4.0	7.0	6.7	3.0	53.42
COSTA RICA	26	1985	1.0	6.8	6.0	2.5	43.13
COSTA RICA	26	1988	0.5	6.3	7.7	3.0	45.79
DOM REP	27	1975	2.5	7.0	7.0	3.5	52.00
DOM REP	27	1980	3.0	7.0	9.5	1.0	53.75
DOM REP	27	1985	1.5	7.3	6.7	3.5	49.67
DOM REP	27	1988	1.5	4.5	6.3	3.5	40.58

Table 2: Index Ratings by Major Category and Summary Rating, 1975, 1980, 1985, 1988-89.

Country	#	Year	I. (22.5%)	II. (30.0%)	III. (25.0%)	IV (22.5%)	Summary Rating
ECUADOR	28	1975	1.5	8.3	6.7	3.5	52.67
ECUADOR	28	1980	4.0	7.0	6.0	2.5	50.63
ECUADOR	28	1985	3.0	7.5	4.7	3.0	47.67
ECUADOR	28	1988	2.0	5.0	5.0	4.0	41.00
EL SALVADOR	29	1975	5.0	9.8	7.3	5.0	70.08
EL SALVADOR	29	1980	2.0	9.3	6.7	3.5	56.79
EL SALVADOR	29	1985	3.5	8.8	4.7	1.5	49.17
EL SALVADOR	29	1988	2.5	9.3	4.3	2.0	48.71
GUATEMALA	30	1975	4.0	9.5	9.0	2.5	65.63
GUATEMALA	30	1980	3.5	9.3	9.0	1.5	61.50
GUATEMALA	30	1985	2.5	9.5	6.7	2.5	56.42
GUATEMALA	30	1988	1.0	8.3	6.3	1.5	46.46
HAITI	31	1975	3.5	9.0	10.0	1.0	62.13
HAITI	31	1980	2.0	8.8	10.0	1.5	59.13
HAITI	31	1985	4.5	6.3	7.5	1.5	51.00
HAITI	31	1988	3.0	5.5	10.0	1.5	51.63
HONDURAS	32	1975	4.5	9.0	10.0	4.5	72.25
HONDURAS	32	1980	4.5	9.3	9.5	5.0	72.88
HONDURAS	32	1985	8.5	9.3	7.0	2.0	68.88
HONDURAS	32	1988	8.0	9.3	7.0	2.0	67.75
JAMAICA	33	1975	3.5	4.0	4.5	5.0	42.38
JAMAICA	33	1980	3.0	3.3	0.0	7.0	32.25
JAMAICA	33	1985	4.0	2.8	1.0	10.0	42.25
JAMAICA	33	1988	1.0	2.5	8.0	9.0	50.00
MEXICO	34	1975	4.5	5.3	5.3	2.5	44.83
MEXICO	34	1980	7.0	4.8	5.3	3.5	51.21
MEXICO	34	1985	1.5	4.3	5.7	4.5	40.42

Table 2: Index Ratings by Major Category and Summary Rating, 1975, 1980, 1985, 1988-89.

Country	#	Year	I. (22.5%)	II. (30.0%)	III. (25.0%)	IV (22.5%)	Summary Rating
MEXICO	34	1988	0.5	2.8	7.3	3.0	34.71
NICARAGUA	35	1975	1.5	9.3	8.0	3.5	59.00
NICARAGUA	35	1980	1.0	7.3	7.0	2.0	46.00
NICARAGUA	35	1985	0.5	0.0	3.3	3.0	16.21
NICARAGUA	35	1988	0.0	4.5	2.0	4.0	27.50
PANAMA	36	1975	4.0	7.3	7.3	6.5	63.71
PANAMA	36	1980	7.5	6.5	7.0	5.5	66.25
PANAMA	36	1985	5.0	5.5	6.3	4.0	52.58
PANAMA	36	1988	9.0	4.7	6.3	3.0	56.83
PARAGUAY	37	1975	3.0	9.5	6.0	0.5	51.38
PARAGUAY	37	1980	4.5	9.5	6.0	2.0	58.13
PARAGUAY	37	1985	2.0	9.0	7.3	3.5	57.71
PARAGUAY	37	1988	4.0	8.0	7.0	3.5	58.38
PERU	38	1975	3.0	5.0	6.0	2.0	41.25
PERU	38	1980	1.0	5.3	5.7	3.0	38.92
PERU	38	1985	0.0	6.3	5.0	2.0	35.75
PERU	38	1988	0.0	5.5	6.0	1.0	33.75
URUGUAY	39	1975	1.5	6.8	6.7	3.0	47.04
URUGUAY	39	1980	1.5	7.3	8.0	0.5	46.25
URUGUAY	39	1985	1.0	7.3	8.0	2.0	48.50
URUGUAY	39	1988	2.0	6.5	7.7	1.0	45.42
VENEZUELA	40	1975	1.5	4.5	8.0	4.5	47.00
VENEZUELA	40	1980	4.0	6.3	7.7	4.0	55.92
VENEZUELA	40	1985	4.0	4.5	7.7	2.5	47.29
VENEZUELA	40	1988	1.5	4.7	8.3	3.0	44.96
CYPRUS	41	1975	5.5	6.3	3.5	4.0	48.88
CYPRUS	41	1980	6.5	6.8	2.0	5.0	51.13

Country	#	Year	I. (22.5%)	II. (30.0%)	III. (25.0%)	IV (22.5%)	Summary Rating
			Table 2: Index Ratings by Major Category and Summary Rating, 1975, 1980, 1985, 1988-89.				
CYPRUS	41	1985	4.0	6.5	2.0	5.5	45.88
CYPRUS	41	1988	8.0	4.7	1.7	4.0	45.17
EGYPT	42	1975	5.0	1.3	1.0	4.5	27.63
EGYPT	42	1980	3.0	2.5	1.3	4.5	27.71
EGYPT	42	1985	6.0	1.5	2.7	4.5	34.79
EGYPT	42	1988	6.0	2.7	3.0	4.0	38.00
GREECE	43	1975	6.5	6.8	4.3	3.5	53.58
GREECE	43	1980	8.5	4.8	2.3	3.5	47.08
GREECE	43	1985	8.5	3.0	1.3	5.0	42.71
GREECE	43	1988	8.5	2.3	2.3	5.0	43.21
ISRAEL	44	1975	0.0	1.0	0.5	4.5	14.38
ISRAEL	44	1980	0.0	1.3	0.7	7.0	21.17
ISRAEL	44	1985	0.0	0.8	1.3	6.5	20.21
ISRAEL	44	1988	0.0	0.5	2.0	6.5	21.13
MALTA	45	1975	7.5	2.0	6.5	7.0	54.88
MALTA	45	1980	7.5	4.0	4.3	7.5	56.58
MALTA	45	1985	6.5	2.5	4.3	7.0	48.71
MALTA	45	1988	9.0	2.0	4.3	7.0	52.83
PORTUGAL	46	1975	3.5	5.0	1.0	4.0	34.38
PORTUGAL	46	1980	6.0	2.3	1.3	6.0	37.08
PORTUGAL	46	1985	6.0	1.8	2.3	7.5	41.46
PORTUGAL	46	1988	3.0	2.3	3.7	7.0	38.67
SYRIA	47	1975	2.0	3.8	5.0	3.5	36.13
SYRIA	47	1980	5.0	7.5	5.0	2.5	51.88
SYRIA	47	1985	6.0	1.0	1.0	1.0	21.25
SYRIA	47	1988	4.0	3.8	4.0	3.0	37.00
TURKEY	48	1975	6.5	6.8	3.0	2.5	48.00

Table 2: Index Ratings by Major Category and Summary Rating, 1975, 1980, 1985, 1988-89.

Country	#	Year	I. (22.5%)	II. (30.0%)	III. (25.0%)	IV (22.5%)	Summary Rating
TURKEY	48	1980	1.0	5.8	2.7	2.5	31.79
TURKEY	48	1985	2.5	5.8	2.7	5.5	41.92
TURKEY	48	1988	1.5	7.2	3.7	5.5	46.42
BANGLADESH	49	1975	1.0	7.8	10.0	2.5	56.13
BANGLADESH	49	1980	3.0	7.3	5.5	3.0	49.00
BANGLADESH	49	1985	3.5	7.5	10.0	4.0	64.38
BANGLADESH	49	1988	3.5	7.5	10.0	3.5	63.25
FIJI	50	1975	4.5	8.0	6.0	3.0	55.88
FIJI	50	1980	6.0	7.5	5.0	4.0	57.50
FIJI	50	1985	5.0	6.8	6.3	2.5	52.96
FIJI	50	1988	4.0	7.8	6.3	2.0	52.58
HONG KONG	51	1975	3.5	10.0	9.7	9.0	82.29
HONG KONG	51	1980	6.0	10.0	9.0	9.5	87.38
HONG KONG	51	1985	5.5	9.0	9.0	9.5	83.25
HONG KONG	51	1988	5.0	9.5	8.7	9.5	82.79
INDIA	52	1975	6.5	4.8	6.7	4.5	55.67
INDIA	52	1980	5.5	4.0	6.7	4.5	51.17
INDIA	52	1985	10.0	3.5	6.0	5.0	59.25
INDIA	52	1988	10.0	3.2	7.3	5.0	61.58
INDONESIA	53	1975	3.0	5.3	7.0	7.0	55.75
INDONESIA	53	1980	2.5	4.8	6.0	7.0	50.63
INDONESIA	53	1985	5.0	4.3	7.7	7.5	60.04
INDONESIA	53	1988	7.5	4.5	6.7	7.5	63.92
KOREA	54	1975	3.0	6.3	4.5	7.0	52.50
KOREA	54	1980	4.5	7.0	3.0	7.5	55.50
KOREA	54	1985	2.5	7.3	3.7	7.5	53.42
KOREA	54	1988	7.5	5.8	4.3	7.5	62.08

Table 2: Index Ratings by Major Category and Summary Rating, 1975, 1980, 1985, 1988-89.

Country	#	Year	I. (22.5%)	II. (30.0%)	III. (25.0%)	IV (22.5%)	Summary Rating
MALAYSIA	55	1975	2.5	6.0	6.3	5.5	51.83
MALAYSIA	55	1980	8.0	6.0	6.0	6.0	64.50
MALAYSIA	55	1985	8.0	4.5	8.0	7.5	68.38
MALAYSIA	55	1988	6.5	4.5	7.7	8.0	65.29
MAURITIUS	56	1975	1.0	7.5	7.5	5.0	54.75
MAURITIUS	56	1980	3.5	7.3	6.0	4.0	53.63
MAURITIUS	56	1985	8.5	6.8	7.0	5.0	68.13
MAURITIUS	56	1988	9.5	7.0	7.7	5.5	73.92
PAKISTAN	57	1975	3.5	4.5	3.3	4.5	39.83
PAKISTAN	57	1980	7.5	3.5	6.7	4.0	53.04
PAKISTAN	57	1985	7.0	5.0	7.0	4.0	57.25
PAKISTAN	57	1988	6.5	4.5	7.7	4.5	57.42
PHILIPPINES	58	1975	3.5	7.5	7.7	4.5	59.67
PHILIPPINES	58	1980	6.0	7.5	6.3	4.5	61.96
PHILIPPINES	58	1985	1.5	7.5	7.0	4.5	53.50
PHILIPPINES	58	1988	2.5	6.2	8.7	4.5	55.92
SINGAPORE	59	1975	3.5	6.5	5.0	9.0	60.13
SINGAPORE	59	1980	7.0	6.5	5.3	9.0	68.83
SINGAPORE	59	1985	6.5	5.0	6.7	9.5	67.67
SINGAPORE	59	1988	8.5	6.0	6.0	9.5	73.50
SRI LANKA	60	1975	5.0	4.3	7.5	4.5	52.88
SRI LANKA	60	1980	4.5	1.8	5.0	4.5	38.00
SRI LANKA	60	1985	3.5	2.3	8.0	4.5	44.75
SRI LANKA	60	1988	4.0	2.8	8.0	4.5	47.38
TAIWAN	61	1975	1.5	6.0	4.0	7.0	47.13
TAIWAN	61	1980	3.0	5.5	4.0	7.5	50.13
TAIWAN	61	1985	6.0	8.0	3.7	8.0	64.67

Table 2: Index Ratings by Major Category and Summary Rating, 1975, 1980, 1985, 1988-89.

Country	#	Year	I. (22.5%)	II. (30.0%)	III. (25.0%)	IV (22.5%)	Summary Rating
TAIWAN	61	1988	5.5	7.5	4.0	8.0	62.88
THAILAND	62	1975	4.0	5.8	5.7	4.5	50.54
THAILAND	62	1980	7.5	6.0	5.7	5.0	60.29
THAILAND	62	1985	7.0	5.8	5.0	5.5	57.88
THAILAND	62	1988	5.5	5.3	5.7	6.0	56.04
BOTSWANA	63	1975	3.0	6.3	6.0	5.0	51.75
BOTSWANA	63	1980	2.0	5.5	5.3	4.5	44.46
BOTSWANA	63	1985	3.5	5.5	5.3	5.5	50.08
BOTSWANA	63	1988	3.0	5.0	5.7	7.0	51.67
CAMEROON	64	1975	3.5	9.0	10.0	3.0	66.63
CAMEROON	64	1980	6.0	8.8	10.0	3.0	71.50
CAMEROON	64	1985	6.5	5.8	7.3	4.0	59.21
CAMEROON	64	1988	6.0	5.3	6.3	1.5	48.46
COTE D'IVOIRE	65	1975	2.5	6.0	9.0	8.0	64.13
COTE D'IVOIRE	65	1980	1.0	4.3	7.0	4.5	42.63
COTE D'IVOIRE	65	1985	4.5	4.5	9.0	5.0	57.38
COTE D'IVOIRE	65	1988	4.5	4.0	9.0	7.0	60.38
GABON	66	1975	1.0	5.0			
GABON	66	1980	1.5	7.0	10.0		
GABON	66	1985	4.5	6.5	8.5	5.5	63.25
GABON	66	1988	5.0	3.3	10.0	9.0	66.25
GHANA	67	1975	2.0	6.3	5.7	3.5	45.29
GHANA	67	1980	1.0	6.8	6.3	0.5	39.46
GHANA	67	1985	1.0	6.5	6.7	1.5	41.79
GHANA	67	1988	3.5	6.5	10.0	3.0	59.13
KENYA	68	1975	4.5	5.3	6.0	6.0	54.38
KENYA	68	1980	2.5	4.3	6.3	5.5	46.58

Table 2: Index Ratings by Major Category and Summary Rating, 1975, 1980, 1985, 1988-89.

Country	#	Year	I. (22.5%)	II. (30.0%)	III. (25.0%)	IV (22.5%)	Summary Rating
KENYA	68	1985	8.0	3.8	5.7	4.5	53.54
KENYA	68	1988	5.5	3.2	7.3	4.0	49.21
MALAWI	69	1975	3.0	6.8	8.7	5.5	61.04
MALAWI	69	1980	2.0	5.3	8.0	4.0	49.25
MALAWI	69	1985	6.5	7.0	7.7	2.0	59.29
MALAWI	69	1988	3.0	5.3	7.7	3.0	48.67
MALI	70	1975	2.0	9.5	9.0	1.5	58.88
MALI	70	1980	8.5	5.5	8.5	3.5	64.75
MALI	70	1985	4.5	4.0	8.5	5.5	55.75
MALI	70	1988	4.5	4.5	9.5	2.5	53.00
MOROCCO	71	1975	4.5	4.5	6.3	4.5	49.58
MOROCCO	71	1980	6.0	4.5	4.7	3.5	46.54
MOROCCO	71	1985	8.5	4.0	2.7	6.0	51.29
MOROCCO	71	1988	7.5	3.0	3.0	5.5	45.75
NIGERIA	72	1975	1.0	7.0	6.0	5.5	50.63
NIGERIA	72	1980	5.0	3.5	7.0	6.0	52.75
NIGERIA	72	1985	6.0	6.0	7.7	4.0	59.67
NIGERIA	72	1988	2.0	5.5	7.0	8.0	56.50
SOUTH AFRICA	73	1975	2.0	7.8	5.3	7.0	56.83
SOUTH AFRICA	73	1980	5.0	6.0	5.7	7.0	59.17
SOUTH AFRICA	73	1985	8.0	5.3	5.7	7.0	63.67
SOUTH AFRICA	73	1988	7.0	4.2	6.5	6.0	58.00
SENEGAL	74	1975	2.5	6.5	8.5	4.5	56.50
SENEGAL	74	1980	5.5	5.3	8.0	3.5	56.00
SENEGAL	74	1985	6.0	4.5	6.3	7.0	58.58
SENEGAL	74	1988	5.0	4.3	6.5	4.0	49.25
TANZANIA	75	1975	5.5	2.5	6.7	4.0	45.54

Country	#	Year	I. (22.5%)	II. (30.0%)	III. (25.0%)	IV (22.5%)	Summary Rating
TANZANIA	75	1980	2.5	3.3	10.0	2.0	44.88
TANZANIA	75	1985	3.5	3.5	5.7	2.0	37.04
TANZANIA	75	1988	3.0	3.0	6.0	6.0	44.25
TUNISIA	76	1975	5.0	7.0	4.5	4.0	52.50
TUNISIA	76	1980	6.0	6.8	6.3	4.5	59.71
TUNISIA	76	1985	5.0	2.0	6.5	4.0	42.50
TUNISIA	76	1988	7.0	2.5	5.5	4.5	47.13
ZAIRE	77	1975	3.0	2.5	7.3	4.0	41.58
ZAIRE	77	1980	1.0	5.0	7.0	4.0	43.75
ZAIRE	77	1985	1.0	5.0	5.5	5.5	43.38
ZAIRE	77	1988	1.0	4.5	5.5	5.5	41.88
ZAMBIA	78	1975	3.0	2.5	5.0	8.0	44.75
ZAMBIA	78	1980	3.0	2.5	4.7	7.0	41.67
ZAMBIA	78	1985	2.0	2.3	5.3	5.0	35.83
ZAMBIA	78	1988	1.0	1.2	5.0	5.5	30.63
ZIMBABWE	79	1975	2.0	4.0	7.0	5.0	45.25
ZIMBABWE	79	1980	4.0	3.0	5.0	6.0	44.00
ZIMBABWE	79	1985	5.0	2.0	4.7	2.5	34.54
ZIMBABWE	79	1988	5.0	0.5	2.3	2.5	24.21

Table 2: Index Ratings by Major Category and Summary Rating, 1975, 1980, 1985, 1988-89.

Table 3a: The 1975-1980 average annual growth rate of per capita GNP for the top 15 and bottom 15 rated countries during the 1975-1980 period.

Country	1975 Summary Rating	1980 Summary Rating	1975-80 Growth Rate
Top 15 Countries:			
HONG KONG	82.29	87.38	9.40%
HONDURAS	72.25	72.88	2.93%
CAMEROON	66.63	71.50	7.49%
UNITED STATES	68.00	68.29	2.30%
JAPAN	61.75	69.25	4.07%
PANAMA	63.71	66.25	2.86%
SINGAPORE	60.13	68.83	6.11%
GUATEMALA	65.63	61.50	3.04%
EL SALVADOR	70.08	56.79	-0.97%
SWITZERLAND	62.75	63.58	1.94%
MALI	58.88	64.75	3.39%
PHILIPPINES	59.67	61.96	3.50%
HAITI	62.13	59.13	3.83%
BELGIUM	57.04	61.04	2.74%
GERMANY	58.00	58.83	3.46%
AVERAGE	64.59	66.13	3.74%
Bottom 15 Countries:			
SPAIN	47.88	37.79	0.60%
ZAIRE	41.58	43.75	-3.97%
GHANA	45.29	39.46	-0.32%
ITALY	39.46	43.96	3.81%
FINLAND	38.92	43.63	2.69%
PERU	41.25	38.92	-0.97%
SWEDEN	42.50	37.38	-0.04%
TURKEY	48.00	31.79	0.57%
ICELAND	38.75	38.00	5.44%
CHILE	33.04	42.33	5.72%
JAMAICA	42.38	32.25	-6.11%
PORTUGAL	34.38	37.08	3.64%
ARGENTINA	29.71	29.50	0.87%
EGYPT	27.63	27.71	6.28%
ISRAEL	14.38	21.17	1.70%
AVERAGE	37.68	36.31	1.33%

Table 3b: The 1980-1988 average annual growth rate of per capita GNP for the top 15 and bottom 15 rated countries during the 1985-1988 period.

Country	1985 Summary Rating	1988 Summary Rating	1980-88 Growth Rate
Top 15 Countries:			
HONG KONG	83.25	82.79	8.82%
JAPAN	74.21	73.21	3.54%
UNITED STATES	69.08	74.21	1.98%
MAURITIUS	68.13	73.92	5.14%
SINGAPORE	67.67	73.50	6.35%
SWITZERLAND	67.96	71.42	1.67%
HONDURAS	68.88	67.75	-1.25%
MALAYSIA	68.38	65.29	2.21%
GABON	63.25	66.25	-3.48%
UNITED KINGDOM	58.54	70.38	2.65%
BANGLADESH	64.38	63.25	1.01%
TAIWAN	64.67	62.88	1.57%
GERMANY	57.75	67.25	1.82%
INDONESIA	60.04	63.92	1.38%
BELGIUM	62.75	59.92	1.36%
AVERAGE	66.59	69.06	2.32%
Bottom 15 Countries:			
TANZANIA	37.04	44.25	-2.12%
PORTUGAL	41.46	38.67	2.09%
ICELAND	32.88	44.50	1.69%
MEXICO	40.42	34.71	-1.28%
NORWAY	37.54	36.88	3.12%
SWEDEN	30.54	42.29	1.90%
EGYPT	34.79	38.00	2.92%
PERU	35.75	33.75	-1.57%
ZAMBIA	35.83	30.63	-2.40%
BRAZIL	31.17	32.71	0.03%
ZIMBABWE	34.54	24.21	2.36%
SYRIA	21.25	37.00	-2.05%
ARGENTINA	20.79	28.88	-2.87%
NICARAGUA	16.21	27.50	-3.13%
ISRAEL	20.21	21.13	1.40%
AVERAGE	31.36	34.34	0.01%

Table 4a: The 1975-1980 average annual growth rate of per capita GNP for the top 10 and bottom 10 rated developing countries during the 1975-1980 period.

Country	1975 Summary Rating	1980 Summary Rating	1975-80 Growth Rate
Top 10 Countries:			
HONG KONG	82.29	87.38	9.40%
HONDURAS	72.25	72.88	2.93%
CAMEROON	66.63	71.50	7.49%
PANAMA	63.71	66.25	2.86%
SINGAPORE	60.13	68.83	6.11%
GUATEMALA	65.63	61.50	3.04%
EL SALVADOR	70.08	56.79	-0.97%
MALI	58.88	64.75	3.39%
PHILIPPINES	59.67	61.96	3.50%
HAITI	62.13	59.13	3.83%
AVERAGE	66.14	67.10	4.16%
Bottom 10 Countries:			
ZAIRE	41.58	43.75	-3.97%
GHANA	45.29	39.46	-0.32%
PERU	41.25	38.92	-0.97%
TURKEY	48.00	31.79	0.57%
CHILE	33.04	42.33	5.72%
JAMAICA	42.38	32.25	-6.11%
PORTUGAL	34.38	37.08	3.64%
ARGENTINA	29.71	29.50	0.87%
EGYPT	27.63	27.71	6.28%
ISRAEL	14.38	21.17	1.70%
AVERAGE	35.76	34.40	0.74%

Table 4b: The 1980-1988 average annual growth rate of per capita GNP for the top 10 and bottom 10 rated developing countries during the 1985-1988 period.			
Country	1985 Summary Rating	1988 Summary Rating	1980-88 Growth Rate
Top 10 Countries:			
HONG KONG	83.25	82.79	8.82%
MAURITIUS	68.13	73.92	5.14%
SINGAPORE	67.67	73.50	6.35%
HONDURAS	68.88	67.75	-1.25%
MALAYSIA	68.38	65.29	2.21%
GABON	63.25	66.25	-3.48%
BANGLADESH	64.38	63.25	1.01%
TAIWAN	64.67	62.88	1.57%
INDONESIA	60.04	63.92	1.38%
SOUTH AFRICA	63.67	58.00	-0.32%
AVERAGE	67.23	67.75	2.14%
Bottom 10 Countries:			
MEXICO	40.42	34.71	-1.28%
EGYPT	34.79	38.00	2.92%
PERU	35.75	33.75	-1.57%
ZAMBIA	35.83	30.63	-2.40%
BRAZIL	31.17	32.71	0.03%
ZIMBABWE	34.54	24.21	2.36%
SYRIA	21.25	37.00	-2.05%
ARGENTINA	20.79	28.88	-2.87%
NICARAGUA	16.21	27.50	-3.13%
ISRAEL	20.21	21.13	1.40%
AVERAGE	29.10	30.85	-0.66%

Table 3b presents parallel growth rate data during the 1980s for countries with high and low economic freedom ratings in 1985 and 1988. During the 1980-88 period, the average growth rate of the fifteen top-rated countries was 2.32 percent, compared to 0.01 percent for the bottom-rated countries. Only two of the top-rated countries—Honduras, and Gabon—experienced negative growth rates during the 1980s, compared to seven of the bottom-rated countries. Interestingly, only three of the bottom-rated countries (Norway, Egypt, and Zimbabwe) were able to achieve the average growth rate of the fifteen top rated countries.

Some might argue that the concept of economic freedom has less relevance for developing countries. Others may feel that it is improper to make comparisons between industrial nations and developing countries. Tables 4a and 4b present growth rate data for the top ten and bottom ten *less developed countries*. Twenty-one, high-income industrial countries were excluded from this analysis. During the 1975-1980 period, the average growth rate of the ten highest rated developing countries was 4.16 percent, compared to 0.74 percent for the bottom ten countries. Among the ten top-rated countries only the war-torn country of El Salvador experienced a negative growth in per capita real GNP during the period.

Table 4b presents similar data for the 1980s. Once again, the annual growth rate of the top-rated countries (2.14 percent) was well above the average growth rate for the bottom-rated countries (-0.66).

Clearly, one would not expect a close relationship between economic freedom at a point in time and the economic growth in the immediate past. If a nation moves toward economic freedom, it will take time to convince decision-makers that the change is permanent, rather than temporary. Thus, there will generally be a lag, perhaps a lag of several years between improvements in economic freedom and substantial increases in economic growth. In addition, political instability will cause people to "discount" the current conditions. When fear of dramatic future change is present, an index that reflects current conditions may be a misleading indicator. Given these deficiencies it is particularly interesting to note that countries with more economic freedom have, on average, experienced more rapid rates of economic growth than those with less freedom.

Has economic freedom changed substantially in some countries? How do *changes* in economic freedom affect economic growth? Exhibit 5 sheds light on these questions. Between 1975 and 1988, twelve countries experi-

enced an increase of ten units or more in our summary index of economic freedom. Some of these counties (Chile, Pakistan, and Ireland, for example) moved from a very low rating into the middle rating category. Others, such as Mauritius, Singapore, and Japan, were initially in the middle category and they moved into upper-middle and top-rating categories. Except for Ghana and Chile (which experienced a positive growth rate for the entire 1975-1988 period), countries that improved their economic freedom rating also experienced economic growth during both 1975-1988 and 1980-1988. The twelve countries with a 10 unit or more increase in our index of economic freedom achieved an average growth rate in per capita GNP of 2.88 percent.

Table 5 also presents data for the fourteen countries for which the summary index of economic freedom declined by 10 units or more during the 1975-1988 period. A few of the countries (for example, El Salvador, Cameroon, and Guatemala) had pretty good ratings in 1975. Others had low rates at the beginning of the period and they sank even lower. The outcome for countries experiencing a decline in economic freedom was quite different from those experiencing an increase. Only one (Cameroon) of these fourteen countries was able to achieve a growth rate of per capita GNP in excess of 1.4 percent during the 1975-1988 period. On average, the per capita GNP of these countries was unchanged during 1975-1988, and it *declined* at an annual rate of 0.69 percent during the 1980s. In fact, only five of the fourteen countries were able to achieve a positive growth rate during the 1980s. Only one (Zimbabwe was just barely able to do so) of the 14 countries was able to achieve the *average* growth rate of per capita GNP for the 12 countries experiencing an increase in economic freedom.

Concluding Thoughts

We would like to conclude with a few words of caution. First, it is important to distinguish between economic freedom and political freedom. Milton Friedman, among others has argued that it will be difficult to maintain political freedom in the absence of economic freedom. With regard to extended time periods, this is probably true. However, we do observe countries with substantial economic freedom—freedom of exchange, protection of private property, freedom of resource use, and consumer

Table 5: The 1980-88 and 1975-88 average annual growth rates of per capita GNP for those countries that experienced substantial changes (10 units or more) in in the Summary Rating.

Country	1975 Summary Rating	1988 Summary Rating	Summary Rating Change	1980-88 Growth Rate	1975-88 Growth Rate
Countries with Substantial Increases in the Rating					
MAURITIUS	54.75	73.92	19.17	5.14%	3.84%
CHILE	33.04	50.96	17.92	-0.37%	1.93%
PAKISTAN	39.83	57.42	17.58	3.24%	3.15%
TAIWAN	47.13	62.88	15.75	1.57%	3.53%
UNITED KINGDOM	55.29	70.38	15.08	2.65%	2.29%
GHANA	45.29	59.13	13.83	-1.92%	-1.31%
MALAYSIA	51.83	65.29	13.46	2.21%	3.69%
SINGAPORE	60.13	73.50	13.38	6.35%	6.25%
JAPAN	61.75	73.21	11.46	3.54%	3.74%
IRELAND	46.38	57.67	11.29	1.01%	1.49%
DENMARK	37.42	48.38	10.96	1.66%	1.75%
EGYPT	27.63	38.00	10.38	2.92%	4.20%
AVERAGE	46.70	60.89	14.19	2.33%	2.88%
Countries with Substantial Decreases in the Rating					
MEXICO	44.83	34.71	-10.13	-1.28%	0.75%
GREECE	53.58	43.21	-10.38	0.22%	1.29%
HAITI	62.13	51.63	-10.50	-2.20%	0.08%
DOM REP	52.00	40.58	-11.42	-0.82%	0.42%
ECUADOR	52.67	41.00	-11.67	-0.07%	1.09%
MALAWI	61.04	48.67	-12.38	1.12%	0.64%
ZAMBIA	44.75	30.63	-14.13	-2.40%	-2.50%
COSTA RICA	61.83	45.79	-16.04	-0.73%	0.43%
CAMEROON	66.63	48.46	-18.17	2.03%	4.10%
GUATEMALA	65.63	46.46	-19.17	-2.79%	-0.59%
BRAZIL	53.17	32.71	-20.46	0.03%	1.36%
ZIMBABWE	45.25	24.21	-21.04	2.36%	-0.89%
EL SALVADOR	70.08	48.71	-21.38	-2.01%	-1.61%
NICARAGUA	59.00	27.50	-31.50	-3.13%	-4.55%
AVERAGE	56.61	40.30	-16.31	-0.69%	0.00%

choice—even though political freedom is limited. Hong Kong and Singapore illustrate this point. On the other hand, there are countries with substantial political freedom—free elections, competitive political parties, and relatively free access to the mass communications media—that nonetheless impose substantial limitations on economic freedom. Israel illustrates this case. Clearly, at any point in time the linkage between economic and political freedom is far from perfect. This is one reason why it is important to quantify both.

Second, the index in this paper is designed to measure economic freedom at a point in time. It is not forward looking. Ominous clouds with regard to the future of freedom may already be present. For example, the enemies of economic freedom may already occupy influential positions in both the media and the government. Political corruption may be a problem. Civil unrest may be widespread. As currently devised, however, our indexes of current economic freedom will fail to register these elements and their implications for the future of economic freedom.

Finally, inability to develop a reasonable indicator for government regulatory activities that are inconsistent with economic freedom is a major shortcoming of our measures. Government regulations are a substitute for government expenditures. Rather than taxing and spending, some countries rely more heavily on mandates and regulations. For example, while some countries levy taxes to fund unemployment benefits, others may mandate that employers provide terminated workers with severance benefits for lengthy periods of time. Both are interferences with the freedom of contract, but our indexes will only register the former. Similarly, governments often institute business and occupational licensing and property-use regulations which, in effect, prohibit transactions among parties. Simultaneously, other regulations may require a potential buyer or seller to deal only with various segments of the population (for example, government workers, the military, or favored groups). Such regulations are highly inconsistent with economic freedom. Unfortunately, our index, as currently structured, generally fails to capture the presence of such regulations.

In our judgement, the index of this paper is a start. We will continue to seek improvements and, perhaps more importantly, we hope that others will also be challenged to pursue improvements in this area.

Notes

[1] A full discussion of the concept of economic freedom is beyond the scope of this paper. For additional information on this issue, see D. Friedman (1989), M. Friedman (1962, 1981, 1983), Rothbard (1970, 1973, 1982), Rabushka (1991), Nozick (1974), Hayek (1944, 1973, 1989), Buchanan and Tullock (1971), and Hoppe (1989).

[2] Milton Friedman made this point very forcefully at an address to the San Francisco Conference of the International Society of Individual Liberty, August 1990.

[3] We owe this example to Leon Loew, who used it in an address to the San Francisco Conference of the International Society of Individual Liberty, August 1990.

[4] See Roger Pilon (1988) for additional analysis of this topic.

[5] We had hoped that we would be able to include a variable on land ownership (percent of the land owned by the government). However, we have been unable to develop this variable for more than a handful of countries.

We also anticipated including a variable on union membership. However, unions are difficult to analyze in that they are associated with two completely different kinds of actions. Their legitimate role is to organize (or threaten) quits en masse unless the terms of employment are improved. Early labor union legislation prohibited this on the grounds of criminal conspiracy. But this is nonsense, since workers do not lose their right to quit merely because others choose to exercise it at the same time. People who do not have the right to quit are called slaves, and slavery is certainly incompatible with economic liberty.

But unions often also seek to prevent employers from hiring replacements for striking workers who are refusing to work at the terms of employment affirmed by the employer. They argue that the jobs "belong" to the workers. But an employment contract is an agreement between two parties; any rights must command mutual, not unilateral support. The union which goes out on strike and demands the right to prevent "scabs" from acting as replacement workers is like a husband who demands the right to leave his wife, and also wants to prevent her from dating other people. Given our inability to develop a unionism variable which is un-

equivocally associated with denigration of economic freedom, we chose not to include a variable in this area.

[6] Several reviewers of this paper have argued that monetary instability is not a violation of economic freedom as long as individuals are free to conduct transactions in gold or in currencies other than the one issued by their government. We are sympathetic to this position. However, most all modern governments required the payment of taxes in domestic currency units. Countries with legal tender laws require that their currency be accepted domestically as means of payments. In addition, governments often interfere with currency exchanges and establish restrictions which make it difficult to conduct business with alternative currencies (or gold). Thus, in most countries it will be difficult to do business without the use of the domestic currency. Given these practical obstacles to the use of alternative currencies in most countries, the authors feel that it is appropriate to include a monetary instability component in the index.

[7] If economic freedom consists of not interfering with owners in the use of their private property, then forcibly taking some of their wealth, with the sole purpose of giving it to others, is a clear violation of economic freedom (Epstein, 1985). The only possible exception to this rule is transfers of income or wealth in order to return stolen property. But here, the money must be returned to those who can show that they were the victims (or heirs) of the theft, and the wealth must be taken from those who were responsible for the stealing (or from their heirs).

[8] An Appendix (2) in the extended version of the paper presents the actual data by country and year for each of the eleven variables used in the index, and the corresponding zero to ten index rating. These data are available from the Fraser Institute or the authors for a limited period of time.

[9] An alternative methodology was used for the following three variables: nonfinancial government enterprises in key industries (IIB), price controls (IIC), and marginal tax rates (IIIB). Appendix I describes the procedures used to develop the zero to ten rating scale for these variables.

Appendix 1: The Methods and Data Sources
Used to Construct the Indexes

The purpose of this appendix is to explain how each component of the index was constructed and indicate the data sources used in the construction of the index.

(IA) Fluctuations in the Money Supply and (IB) the Inflation Rate

The money supply and GNP deflator data for each country were assembled for the 1971-1988 period. The money supply data are from the IMF, *International Financial Statistics Yearbook,* while the GNP deflator data are from the World Bank, *World Tables 1989-1990.* Utilizing these data, the standard deviation for both in the annual money supply growth and the annual rate of inflation during the last 5 years was derived for 1975, 1980, 1985, and 1988. The standard deviation data for 1985 were used to allocate an equal number of countries into each of eleven ratings ranging from zero to ten. The standard deviation intervals from the 1985 base year were derived and then used to rate each country in the other years. Countries with the most stability in the growth rates of the money supply and inflation rate were given the highest ratings.

(IIA) Total Government Expenditures as a Percent of GNP

Data on total government expenditures and GNP were obtained by country for 1975, 1980, 1985, and 1988. Both of these variables were measured in the country's domestic currency units. Using the 1985 data, countries were placed into each of the eleven ratings and the interval for each of the ratings was derived. The intervals from the 1985 ratings were then used to rate each country in the other years. Countries with the lowest government expenditure/GNP ratio were given the highest ratings.

(IIBi) Total Number of Central Government Enterprises

Since 1977 the International Monetary Fund has provided a list of the Nonfinancial Government Enterprises of the central governments for most

countries. It was necessary to utilize 1977 data in our 1975 index and 1979 data in our 1980 index. The total number of government enterprises was tabulated for each year. As for most other variables, the intervals for each of the 11 ratings were derived in 1985 and these base year intervals were then used to rate the countries in the other years.

(IIBii) Government Enterprises in Designated Industries

The International Monetary Fund data also indicate the industry (or business activity) of government nonfinancial enterprises. These data were used to determine whether a government enterprise was operating in the following areas: (1) agriculture products, (2) airlines, (3) radio and television broadcasting, (4) steel, aluminum, and/or cement manufacturing, (5) chemicals and fertilizers, (6) fishing or mining (7) hotels and/or theaters, (8) petroleum, gas and/or coal, (9) pharmaceuticals, and (10) real estate and/or housing. Countries which did not have a government enterprise in any of these areas were given a rating of ten for this variable. One point was subtracted for each of the ten areas in which the country was operating a government enterprise. Thus, a country would receive a rating of zero if the central government of the country was operating an enterprise in all ten of the areas. Since this procedure places each country on a zero to ten scale, no further adjustments were necessary for this variable.

(IIC) Price Controls

The *World Competitiveness Report 1989* (p. 95) contains survey data indicating the "extent to which companies can set their prices freely: 0 = not at all, to 100 = very much so." Thirty-two countries were surveyed. Since this is the most comprehensive quantifiable indicator of the presence or absence of price controls which we could find, we used it to rate these 32 countries. These countries were rated as follows:

Percent Indicating Companies Can
Set Prices Freely (countries in the
category are indicated in parenthesis)   *Rating of Country*

More than 90% (Hong Kong)	10
85% to 90% (Germany, New Zealand)	9
80% to 85% (Canada, Turkey, U.K., U.S., Singapore)	8
75% to 80% (Ireland, Netherlands, Switzerland)	7
70% to 75% (Australia, Denmark, Taiwan, Finland, France, Japan, Spain, Sweden, Indonesia)	6
65% to 70% (Austria, Italy, Norway, Malaysia)	5
60% to 65% (Portugal, Thailand)	4
55% to 60% (India, Korea)	3
50% to 55% (Belgium)	2
45% to 50% (None in this range)	1
Less than 45% (Greece, Brazil, Mexico)	0

In addition, Price Waterhouse (*Doing Business in [various countries]*) provides a verbal description on the presence or absence of price controls for several countries. This verbal description was used to place countries into the following categories and ratings:

Category	*Rating*
No Price Controls or Marketing boards	10
Only a few items (primarily agricultural goods) are subject to price controls	8
Price controls on some items; however, the price of most commodities is determined by market forces	6
Price controls on most stable goods (e.g. foods, clothing, and housing), but the price of most other goods is determined by market forces	5
Price controls on a significant number of both agricultural and manufactured goods	3
Widespread use of price controls	0

This zero to ten scale was used directly to rate each country. The data on the price control variable were available only for the "late 1980s."

(IIIA) Transfers and Subsidies As A Percent of GNP

Data on "subsidies and other current transfers" were available from the International Monetary Fund. The transfer data were divided by GNP. Both were measured in the domestic currency units of each country. If this variable was unavailable, data on the central government expenditures on "Housing, amenities, social security, and welfare" (from the *World Development Report*) as a percent of GNP were used to estimate the size of the transfer sector. As in prior cases, the 1985 data on transfers and subsidies as a percent of GNP were arranged from lowest to highest and used to allocate an equal number of countries into each of the zero to ten ratings in 1985. The intervals for each rating for 1985 were then derived and used to rate each country during the other years.

(IIIB) Marginal Tax Rates

Data on the top marginal tax rate and the income threshold at which the top rate takes effect were available for 1974, 1979, 1984, and 1989 from Price Waterhouse. These years were used to calculate the 1975, 1980, 1985, and 1988 indexes, respectively. The exchange rate at year end was used to convert to U.S. dollars. Finally, the U.S. Consumer Price Index was used to convert the income threshold for each year into 1982-1984 dollars.

The following conversion table was used to rate the marginal tax rate/income threshold of each country:

Top Marginal Tax Rate	Income Threshold Level (1982-1984 U.S. dollars)				
	Less than 25,000	25,000 to 50,000	50,000 to 100,000	100,000 to 250,000	More than 250,000
15% or less	10	10	10	10	10
16 to 20	9	10	10	10	10
21 to 25	8	9	10	10	10
26 to 30	7	8	9	10	10
31 to 35	6	7	8	9	10
36 to 40	5	6	7	8	9
41 to 45	4	5	6	7	8
46 to 50	3	4	5	6	7
51 to 55	2	3	4	5	6
56 to 60	1	2	3	4	5
61 to 65	0	1	2	3	4
66 to 70	0	0	1	2	3
71 to 75	0	0	0	1	2
76 to 80	0	0	0	0	1
More than 80	0	0	0	0	0

When there was a range of top marginal tax rates within a country, as was sometimes the case under federal systems of government, the midpoint of the top rates for the country was used to derive the rating for this variable.

(IIIC) Conscription

Data on conscription and the number of conscriptees per 1000 population were obtained from the International Institute for Strategic Studies, *The Military Balance* for each year. (Note: It was necessary to use the 1978-1979 data in the construction of the 1980 index.) Countries with a voluntary military service were given a rating of 10. If a country uses conscription to obtain military personal, the number of conscriptees (or the number in the armed forces if the number of conscriptees was unavailable) per 1000 population was derived. This data for 1985 was then used to derive the

intervals for each country. In turn, the 1985 interval data were used to rate countries in the other years. Countries with the most conscriptees per 1000 population were given the lowest ratings.

(IVA) Taxes on International Trade

Data on "Taxes—International Trade Transactions" were obtained for each country from the International Monetary Fund. This number was divided by the sum of imports plus exports to derive an average tax rate for international trade transaction. This average tax rate was then used to allocate countries into the 11 rating intervals for 1985. The 1985 intervals for each rating were derived and used to rate each country for the other years. The larger the ratio of taxes on international trade relative to the size of the nation's trade sector (imports plus exports), the lower the rating of the country.

(IVB) Actual Size of Trade Sector Compared to the Expected Size.

The size of trade sector as a percent of GNP is influenced by size of country and income. Small countries tend to have smaller domestic markets and therefore larger trade sectors. Similarly, the size of the trade sector tends to increase with per capita income. The necessary data were obtained to estimate the following regression equation:

$$T_c \quad = \quad F(Pop_c, GNP_c, t_c)$$

where

T_c	=	is expected size of trade sector as a percent of GNP,
Pop_c	=	is the logarithm of the population of the country,
GNP_c	=	is the country's real income in U.S. dollars, and
t_c	=	is the country's average tax rate on international trade.

Dummy variables were included to indicate the year in the estimated equation. The estimate equation for the expected size of the trade sector is presented below:

Variable	Coefficient	t-ratio
Constant	.5622	16.6
Population	-.0742	-10.6
Per Capita GNP	-.3268	-1.0
Average Trade Tax	-.5470	-4.1
1980 (dummy)	.0423	1.5
1985 (dummy)	.0343	1.2
1987 (dummy)	.0279	1.0

$R^2 = .33$
$n = 314$

This regression equation was used to estimate the expected size of the trade sector for each country. The actual size of the trade sector of each country was then compared with its estimated expected size. If a country has substantial nontax trade restraints, one would expect that the actual size of the trade sector would be smaller than the expected size. When the actual size of a country's trade sector is small relative to expected size the country is given a low rating.

The following table summarizes the data sources used for the development of each component of our index.

The Primary Data Source For Variables	
Variables	**Primary Data Source[a]**
IA. Money Supply	International Monetary Fund, *International Financial Statistics Yearbook, 1989*
IB. GNP Deflator	World Bank, *World Tables 1989-90*
IIA. Total Government Expenditures	International Monetary Fund, *Government Finance Statistics Yearbook*, (various years)
IIB. Nonfinancial Government Enterprises (both the total and number in key industries)	International Monetary Fund, *Government Finance Statistics Yearbook*, (various years)
IIIA. Transfer Expenditures as a Percent of GNP	International Monetary Fund, *Government Finance Statistics Yearbook*, (various years)
IVA. International Trade Taxes	International Monetary Fund, *Government Finance Statistics Yearbook*, (various years).
IIC. Price Controls	World Economic Forum, *The World Competitiveness Report, 1989* and Price Waterhouse, *Doing Business in* (name of country)
IIIB. Marginal Tax Rates (and Income Thresholds)	Price Waterhouse, *Invidivual Tax Rates*, (various issues)
IIIC. Conscripts Per 100 Population	International Institute for Strategic Studies, *The Military Balance* (annual-various issues)
IVA. and IVB. Exports, Imports, Population and GNP (in both domestic currency and U.S. dollars)	World Bank, *World Tables 1989-90*

[a] In addition, the following data sources were also used when data were unavailable from primary sources: The World Bank, *World Development Report* (annual); James W. Wilkie (ed.), *Statistical Abstract of Latin America*, (Los Angeles: UCLA Latin American Center Publications, (various issues); Directorate-General of the Budget-Republic of China, *Statistical Yearbook of the Republic of China*, (various issues); Government Information Services, Hong Kong, *Hong Kong 1989*, (and other years).

Appendix 2: IA—The standard deviation of the annual growth rate of the money supply for the previous five years

Country	#	1975		1980		1985		1988	
UNITED STATES	1	0.0177	10	0.0071	10	0.0234	10	0.0513	7
CANADA	2	0.0573	6	0.0396	8	0.0994	3	0.0990	3
AUSTRALIA	3	0.0854	3	0.0399	8	0.0514	7	0.0929	3
JAPAN	4	0.0733	4	0.0467	7	0.0336	9	0.0262	10
NEW ZEALAND	5	0.1002	3	0.0756	4	0.0403	8	0.1394	2
AUSTRIA	6	0.0544	6	0.0452	7	0.0342	9	0.0283	10
BELGIUM	7	0.0388	8	0.0297	9	0.0278	10	0.0249	10
DENMARK	8	0.0887	3	0.0331	9	0.1012	3	0.1099	2
FINLAND	9	0.0606	5	0.0816	4	0.0336	9	0.0629	5
FRANCE	10	0.0208	10	0.0220	10	0.0519	7	0.0569	6
GERMANY	11	0.0468	7	0.0494	7	0.0235	10	0.0198	10
ICELAND	12	0.0652	5	0.1161	2	0.2843	1	0.3048	1
IRELAND	13	0.0528	6	0.0669	5	0.0362	8	0.0332	9
ITALY	14	0.0488	7	0.0431	8	0.0235	10	0.0193	10
NETHERLANDS	15	0.0691	5	0.0363	8	0.0357	9	0.2390	1
NORWAY	16	0.0219	10	0.0358	9	0.0482	7	0.1501	2
SPAIN	17	0.0289	10	0.0455	7	0.0349	9	0.0340	9
SWEDEN	18	0.0257	10	0.0160	10	0.4763	0	0.0445	7
SWITZERLAND	19	0.0587	6	0.0899	3	0.0324	9	0.0362	8
UNITED KINGDOM	20	0.0457	7	0.0581	6	0.0302	9	0.0330	9
ARGENTINA	21	0.6729	0	0.6275	0	1.7982	0	1.9508	0
BOLIVIA	22	0.1151	2	0.1167	2	18.2952	0	18.7233	0
BRAZIL	23	0.0485	7	0.1746	1	0.9999	0		
CHILE	24	0.7625	0	0.6272	0	0.0575	6		
COLOMBIA	25	0.0655	5	0.0328	9	0.0529	6	0.0672	5
COSTA RICA	26	0.0703	5	0.0721	4	0.2234	1	0.1870	1
DOMINICAN REP	27	0.1222	2	0.1160	2	0.1489	2	0.1282	2
ECUADOR	28	0.1491	2	0.0729	4	0.0784	4	0.1200	2
EL SALVADOR	29	0.0565	6	0.1286	2	0.0926	3	0.0891	3
GUATEMALA	30	0.0667	5	0.1268	2	0.2054	1	0.1788	1
HAITI	31	0.0822	4	0.1621	1	0.1034	3	0.2047	1
HONDURAS	32	0.0748	4	0.0949	3	0.0501	7	0.0584	6
JAMAICA	33	0.0688	5	0.1198	2	0.0572	6	0.1724	1
MEXICO	34	0.0559	6	0.0155	10	0.1119	2	0.2371	1

Appendix 2: IA—The standard deviation of the annual growth rate of the money supply for the previous five years

Country	#	1975		1980		1985		1988	
NICARAGUA	35	0.1750	1	0.2515	1	0.1560	1		
PANAMA	36	0.1527	2	0.0452	7	3.0642	0		
PARAGUAY	37	0.0804	4	0.0649	5	0.1275	2	0.0992	3
PERU	38	0.1075	3	0.1886	1	0.9005	0	0.7810	0
URUGUAY	39	0.1363	2	0.1906	1	0.3629	1	0.2038	1
VENEZUELA	40	0.1216	2	0.0542	6	0.0730	4	0.1135	2
CYPRUS	41	0.0606	5	0.0798	4	0.0613	5	0.0480	7
EGYPT	42	0.0616	5	0.1338	2	0.0442	7	0.0301	9
GREECE	43	0.0259	10	0.0281	10	0.0283	10	0.0355	9
ISRAEL	44	1.5557	0	0.6360	0	1.0188	0	1.2572	0
MALTA	45	0.0536	6	0.0354	9	0.0447	7	0.0361	8
PORTUGAL	46	0.1087	3	0.0600	6	0.0701	5	0.1024	3
SYRIA	47	0.1255	2	0.0632	5	0.0401	8	0.0553	6
TURKEY	48	0.0392	8	0.1423	2	0.0925	3	0.1633	1
BANGLADESH	49			0.0748	4	0.1340	2	0.1137	2
FIJI	50	0.0471	7	0.0316	9	0.0667	5	0.2305	1
HONG KONG	51	0.1520	2	0.0430	8	0.0788	4	0.1164	2
INDIA	52	0.0262	10	0.0475	7	0.0250	10	0.0283	10
INDONESIA	53	0.0699	5	0.1015	3	0.0790	4	0.0283	10
KOREA	54	0.1044	3	0.0850	3	0.1596	1	0.0673	5
MALAYSIA	55	0.1270	2	0.0197	10	0.0475	7	0.0546	6
MAURITIUS	56	0.1889	1	0.0680	5	0.0423	8	0.0307	9
PAKISTAN	57	0.0664	5	0.0593	6	0.0563	6	0.0536	6
PHILIPPINES	58	0.0632	5	0.0447	7	0.1402	2	0.0733	4
SINGAPORE	59	0.0950	3	0.0310	9	0.0638	5	0.0460	7
SRI LANKA	60	0.0393	8	0.0839	4	0.0608	5	0.0630	5
TAIWAN	61	0.1274	2	0.1020	3	0.0301	9	0.1583	1
THAILAND	62	0.0543	6	0.0399	8	0.0413	8	0.0834	4
BOTSWANA	63			0.1356	2	0.0810	4	0.0761	4
CAMEROON	64	0.0942	3	0.0739	4	0.0864	3	0.0456	7
COTE D'IVOIRE	65	0.1062	3	0.2038	1	0.0554	6	0.0543	6
GABON	66	0.1962	1	0.2773	1	0.0583	6	0.0412	8
GHANA	67	0.1507	2	0.2231	1	0.1439	2	0.0677	5
KENYA	68	0.0622	5	0.1314	2	0.0464	7	0.1270	2

Country	#	1975		1980		1985		1988	
Appendix 2: IA—The standard deviation of the annual growth rate of the money supply for the previous five years									
MALAWI	69	0.1440	2	0.1337	2	0.0670	5	0.1301	2
MALI	70	0.1688	1	0.0500	7	0.1063	3	0.1068	3
MOROCCO	71	0.0469	7	0.0387	8	0.0441	7	0.0382	8
NIGERIA	72	0.3097	1	0.1678	1	0.0306	9	0.1439	2
SOUTH AFRICA	73	4.1912	0	0.0503	7	0.0238	10	0.0604	5
SENEGAL	74	0.1803	1	0.0700	5	0.0802	4	0.0640	5
TANZANIA	75	0.0422	8	0.1502	2	0.0790	4	0.1425	2
TUNISIA	76	0.0437	8	0.0477	7	0.0648	5	0.0636	5
ZAIRE	77	0.1142	2	0.2373	1	0.1812	1	0.3350	1
ZAMBIA	78	0.1500	2	0.1236	2	0.1211	2	0.2584	1
ZIMBABWE	79			0.1105	2	0.0522	6	0.0754	4
AVERAGE		0.1768	4.5	0.1075	4.8	0.4080	5.1	0.3950	4.5

Appendix 2: IB—The standard deviation of the annual growth rate of the price level for the previous five years

Country	#	1975		1980		1985		1988	
UNITED STATES	1	0.0193	8	0.0109	10	0.0244	7	0.0038	10
CANADA	2	0.0386	5	0.0190	9	0.0319	6	0.0080	10
AUSTRALIA	3	0.0430	5	0.0221	8	0.0186	9	0.0101	10
JAPAN	4	0.0574	3	0.0145	9	0.0083	10	0.0063	10
NEW ZEALAND	5	0.0340	5	0.0194	8	0.0394	5	0.0340	5
AUSTRIA	6	0.0120	10	0.0062	10	0.0131	9	0.0101	10
BELGIUM	7	0.0304	6	0.0171	9	0.0078	10	0.0169	9
DENMARK	8	0.0204	8	0.0084	10	0.0242	7	0.0043	10
FINLAND	9	0.0529	4	0.0180	9	0.0200	8	0.0146	9
FRANCE	10	0.0261	7	0.0080	10	0.0229	8	0.0168	9
GERMANY	11	0.0095	10	0.0041	10	0.0095	10	0.0053	10
ICELAND	12	0.1121	2	0.0746	2	0.1850	1	0.0367	5
IRELAND	13	0.0527	4	0.0347	5	0.0484	4	0.0193	8
ITALY	14	0.0513	4	0.0220	8	0.0357	5	0.0203	8
NETHERLANDS	15	0.0203	8	0.0164	9	0.0201	8	0.0060	10
NORWAY	16	0.0205	8	0.0308	6	0.0331	5	0.0193	8
SPAIN	17	0.0369	5	0.0321	6	0.0169	9	0.0230	8
SWEDEN	18	0.0248	7	0.0310	6	0.0124	10	0.0076	10
SWITZERLAND	19	0.0108	10	0.0115	10	0.0205	8	0.0046	10
UNITED KINGDOM	20	0.0750	2	0.0265	7	0.0245	7	0.0104	10
ARGENTINA	21	0.6002	0	1.1778	0	2.3715	0	2.5465	0
BOLIVIA	22	0.2066	1	0.1095	2	44.4849	0	44.7047	0
BRAZIL	23	0.0689	3	0.1788	1	0.5584	0	1.9621	0
CHILE	24	2.5116	0	0.8160	0	0.0830	2	0.0610	3
COLOMBIA	25	0.0571	3	0.0420	5	0.0165	9	0.0284	6
COSTA RICA	26	0.0881	2	0.0443	4	0.2415	1	4.1930	0
DOMINICAN REP	27	0.0658	3	0.0466	4	0.1316	1	0.1344	1
ECUADOR	28	0.1452	1	0.0437	4	0.1023	2	0.1000	2
EL SALVADOR	29	0.0442	4	0.0745	2	0.0492	4	0.0905	2
GUATEMALA	30	0.0648	3	0.0360	5	0.0530	4	0.1318	1
HAITI	31	0.0585	3	0.0654	3	0.0308	6	0.0417	5
HONDURAS	32	0.0417	5	0.0297	6	0.0117	10	0.0114	10
JAMAICA	33	0.0992	2	0.0514	4	0.0995	2	0.2197	1
MEXICO	34	0.0611	3	0.0495	4	0.2042	1	0.3122	0
NICARAGUA	35	0.0905	2	0.1378	1	0.5989	0	1.5771	0
PANAMA	36	0.0314	6	0.0227	8	0.0128	10	0.0135	9
PARAGUAY	37	0.0749	2	0.0524	4	0.0747	2	0.0332	5
PERU	38	0.0575	3	0.1695	1	0.3633	0	2.1504	0

Country	#	1975		1980		1985		1988	
URUGUAY	39	0.2736	1	0.1038	2	0.2233	1	0.0667	3
VENEZUELA	40	0.1503	1	0.0742	2	0.0518	4	0.1333	1
CYPRUS	41	0.0323	6	0.0172	9	0.0653	3	0.0161	9
EGYPT	42	0.0404	5	0.0475	4	0.0339	5	0.0653	3
GREECE	43	0.0719	3	0.0237	7	0.0266	7	0.0197	8
ISRAEL	44	4.0173	0	0.3299	0	1.0218	0	1.5022	0
MALTA	45	0.0169	9	0.0298	6	0.0293	6	0.0128	10
PORTUGAL	46	0.0521	4	0.0327	6	0.0251	7	0.0555	3
SYRIA	47	0.0885	2	0.0425	5	0.0527	4	0.1174	2
TURKEY	48	0.0424	5	0.3138	0	0.0848	2	0.1164	2
BANGLADESH	49	0.2754	1	0.0948	2	0.0402	5	0.0375	5
FIJI	50	0.0907	2	0.0568	3	0.0384	5	0.0248	7
HONG KONG	51	0.0353	5	0.0542	4	0.0240	7	0.0230	8
INDIA	52	0.0643	3	0.0475	4	0.0119	10	0.0048	10
INDONESIA	53	0.1600	1	0.1022	2	0.0283	6	0.0418	5
KOREA	54	0.0712	3	0.0327	6	0.0489	4	0.0060	10
MALAYSIA	55	0.0710	3	0.0303	6	0.0180	9	0.0235	7
MAURITIUS	56	0.2018	1	0.0799	2	0.0135	9	0.0105	10
PAKISTAN	57	0.0855	2	0.0159	9	0.0229	8	0.0263	7
PHILIPPINES	58	0.0873	2	0.0338	5	0.1548	1	0.1733	1
SINGAPORE	59	0.0482	4	0.0374	5	0.0218	8	0.0113	10
SRI LANKA	60	0.0778	2	0.0360	5	0.0780	2	0.0682	3
TAIWAN	61	0.1717	1	0.0561	3	0.0618	3	0.0044	10
THAILAND	62	0.0799	2	0.0279	7	0.0300	6	0.0253	7
BOTSWANA	63	0.0679	3	0.0828	2	0.0601	3	0.0796	2
CAMEROON	64	0.0519	4	0.0191	8	0.0111	10	0.0411	5
COTE D'IVORE	65	0.0915	2	0.1345	1	0.0577	3	0.0613	3
GABON	66	0.2368	1	0.1149	2	0.0652	3	0.0899	2
GHANA	67	0.0886	2	0.1715	1	0.3811	0	0.0725	2
KENYA	68	0.0497	4	0.0617	3	0.0177	9	0.0142	9
MALAWI	69	0.0531	4	0.0801	2	0.0212	8	0.0473	4
MALI	70	0.0566	3	0.0127	10	0.0329	6	0.0298	6
MOROCCO	71	0.0839	2	0.0454	4	0.0092	10	0.0239	7
NIGERIA	72	0.1633	1	0.0180	9	0.0694	3	0.1195	2
SOUTH AFRICA	73	0.0530	4	0.0602	3	0.0312	6	0.0151	9
SENEGAL	74	0.0531	4	0.0287	6	0.0225	8	0.0412	5
TANZANIA	75	0.0563	3	0.0564	3	0.0603	3	0.0548	4
TUNISIA	76	0.0768	2	0.0345	5	0.0379	5	0.0171	9
ZAIRE	77	0.0519	4	0.2549	1	0.2246	1	0.2248	1

Appendix 2: IB—The standard deviation of the annual growth rate of the price level for the previous five years

Appendix 2: IB—The standard deviation of the annual growth rate of the price level for the previous five years

Country	#	1975		1980		1985		1988	
ZAMBIA	78	0.0541	4	0.0432	4	0.1262	2	0.2063	1
ZIMBABWE	79	0.1075	2	0.0283	6	0.0447	4	0.0310	6
AVERAGE		0.1622	3.6	0.0828	5	0.6783	5.1	0.7892	5.6

Appendix 2: IIA—Total government expenditures as a share of GNP

Country	#	1975		1980		1985		1987	
UNITED STATES	1	35.00	4	34.90	4	37.40	4	36.90	4
CANADA	2	43.00	3	42.00	3	47.30	1	44.50	2
AUSTRALIA	3	34.00	5	33.00	5	39.80	3	39.30	3
JAPAN	4	20.87	9	24.98	7	26.91	7	27.10	7
NEW ZEALAND	5	40.30	3	42.43	3	42.90	3	46.60	2
AUSTRIA	6	48.10	1	50.60	1	53.00	1	53.30	1
BELGIUM	7	46.49	2	55.40	0	59.60	0	55.60	0
DENMARK	8	43.52	2	57.90	0	56.49	0	54.70	1
FINLAND	9	41.20	3	41.50	3	43.30	3	44.40	2
FRANCE	10	42.70	3	44.10	2	50.20	1	49.10	1
GERMANY	11	48.60	1	49.50	1	48.90	1	48.20	1
ICELAND	12	38.50	3	32.20	5	34.30	4	36.60	4
IRELAND	13	49.30	1	53.40	1	57.00	0	55.40	0
ITALY	14	51.00	1	48.40	1	48.80	1	53.20	1
NETHERLANDS	15	52.30	1	57.60	0	59.00	0	63.30	0
NORWAY	16	57.50	0	54.50	1	50.10	1	55.40	0
SPAIN	17	24.15	7	31.20	5	39.90	3	38.80	3
SWEDEN	18	52.20	1	63.20	0	64.80	0	59.20	0
SWITZERLAND	19	35.40	4	37.00	4	38.00	3	37.70	4
UNITED KINGDOM	20	50.70	1	46.80	2	45.50	2	42.10	3
ARGENTINA	21	30.30	6	35.30	4	38.00	3	33.40	5
BOLIVIA	22	11.60	10	13.80	10	22.70	8		
BRAZIL	23	28.80	6	30.40	6	45.70	2	54.90	0
CHILE	24	32.70	5	28.10	7	33.30	5	30.10	6
COLOMBIA	25	14.30	9	16.50	9	16.13	9	16.40	9
COSTA RICA	26	21.00	9	25.80	7	23.50	8	25.00	7
DOM REP	27	17.55	9	16.92	9	12.70	10		
ECUADOR	28	20.94	9	23.73	8	21.39	9	17.90	9
EL SALVADOR	29	14.10	10	16.20	9	15.40	9	12.30	10
GUATEMALA	30	9.80	10	15.80	9	9.70	10	11.20	10
HAITI	31	18.64	9	17.60	9	24.60	7		
HONDURAS	32	17.40	9	14.54	9	17.00	9	20.70	9
JAMAICA	33	35.60	4	43.20	3	40.40	3	47.50	1
MEXICO	34	20.60	9	22.20	8	26.90	7	26.10	7
NICARAGUA	35	20.40	9	32.20	5	63.10	0	58.00	0
PANAMA	36	33.60	5	33.30	5	33.90	5	33.70	5
PARAGUAY	37	11.80	10	11.30	10	11.80	10	12.70	10
PERU	38	24.30	7	26.70	7	23.70	8	17.80	9
URUGUAY	39	24.90	7	24.30	7	24.36	7	27.80	7
VENEZUELA	40	34.40	4	24.05	7	28.77	6	31.00	5
CYPRUS	41	34.50	4	32.10	5	30.80	5	30.20	6

Appendix 2: IIA—Total government expenditures as a share of GNP

Country	#	1975		1980		1985		1987	
EGYPT	42	61.50	0	53.50	1	50.70	1	46.50	2
GREECE	43	31.50	5	36.80	4	43.76	2	38.30	3
ISRAEL	44	67.80	0	64.40	0	68.30	0	62.90	0
MALTA	45	56.20	0	35.50	4	45.40	2	41.10	3
PORTUGAL	46	33.96	5	37.90	4	46.00	2	44.20	2
SYRIA	47	46.79	2	18.18	9			28.10	7
TURKEY	48	21.10	9	25.20	7	25.00	7	21.90	9
BANGLADESH	49	8.50	10	11.70	10	12.10	10	12.20	10
FIJI	50			25.80	7	28.59	6		
HONG KONG	51	13.50	10	10.10	10	15.00	9	14.60	9
INDIA	52	23.00	8	25.40	7	28.80	6	30.50	6
INDONESIA	53	21.30	9	24.00	8	22.70	8	26.80	7
KOREA	54	19.30	9	20.70	9	21.20	9	20.30	9
MALAYSIA	55	36.80	4	38.70	3	43.50	2	35.90	4
MAURITIUS	56	26.23	7	30.10	6	28.30	6	25.20	7
PAKISTAN	57	27.80	7	31.50	5	22.90	8	25.10	7
PHILIPPINES	58	17.60	9	14.66	9	13.40	10	17.33	9
SINGAPORE	59	23.90	8	23.30	8	36.00	4	34.40	4
SRI LANKA	60	26.40	7	43.20	3	34.80	4	31.20	5
TAIWAN	61	21.40	9	23.20	8	22.80	8	20.50	9
THAILAND	62	16.40	9	20.50	9	22.50	8	20.40	9
BOTSWANA	63	30.00	6	34.00	5	31.20	5	37.30	4
CAMEROON	64	16.11	9	13.66	10	21.20	9	23.40	8
COTE D'IVOIRE	65	24.10	7	33.60	5	31.60	5		
GABON	66	42.26	3					45.90	2
GHANA	67	21.90	9	13.40	10	13.50	10	14.10	10
KENYA	68	26.90	7	31.10	5	29.70	6	31.50	5
MALAWI	69	27.00	7	39.80	3	28.10	7	30.10	6
MALI	70			24.43	7	34.88	4	35.50	4
MOROCCO	71	35.40	4	35.20	4	33.20	5	30.30	6
NIGERIA	72	24.10	7			12.90	10	23.60	8
SOUTH AFRICA	73	18.78	9	29.50	6	34.10	5	34.30	4
SENEGAL	74	20.30	9	24.35	7	30.76	6		
TANZANIA	75	34.71	4	30.87	5	26.00	7	20.90	9
TUNISIA	76	31.40	5	35.50	4	40.40	3	36.10	4
ZAIRE	77	36.80	4	29.00	6	29.50	6	31.90	5
ZAMBIA	78	42.80	3	37.00	4	34.90	4	40.30	3
ZIMBABWE	79	37.60	4	42.80	3	47.20	2	47.30	1
AVERAGE		30.81	5.7	32.12	5.4	34.00	5.0	34.63	4.8

Appendix 2: IIB—The total number of non-financial government enterprises with corresponding index

Country	#	'77		'79		'85		'89		'77	'79	'85	'89
		Total number of enterprises...								Designated areas...			
UNITED STATES	1	15	9	15	9	15	9	15	9	9	9	9	9
CANADA	2	35	6	31	6	35	6	39	5	3	3	5	5
AUSTRALIA	3	23	8	23	8	30	7	33	6	6	6	6	6
JAPAN	4	40	5	34	6	30	7	30	7	6	7	7	7
NEW ZEALAND	5	25	8	25	8	22	9	22	9	6	6	3	3
AUSTRIA	6	77	3	82	3	84	2	84	2	1	1	2	2
BELGIUM	7	13	10	13	10	12	10	12	10	7	7	7	7
DENMARK	8			35	6	34	6	30	7		4	4	4
FINLAND	9	30	7	30	7	30	7	34	6	3	4	3	3
FRANCE	10			8	10	7	10	12	10		8	8	7
GERMANY	11	51	4	51	4	56	3	54	4	7	7	5	5
ICELAND	12	33	6	47	4	46	4	38	6	3	3	3	3
IRELAND	13	23	8	26	7	25	8	25	8	4	4	3	3
ITALY	14					380	0	375	0			1	1
NETHERLANDS	15	12	10	12	10	25	8	25	8	6	6	6	6
NORWAY	16	48	4	48	4	120	1	120	1	2	2	1	1
SPAIN	17	120	1	163	0	210	0	316	0				
SWEDEN	18	51	4	51	4	90	2	91	2	2	2	2	2
SWITZERLAND	19	7	10	8	10	6	10	6	10	10	10	10	10
UNITED KINGDOM	20	24	8	26	7	46	4	49	4	4	5	5	6
ARGENTINA	21			23	8	49	4	43	5		4	1	1
BOLIVIA	22			33	6	58	3	30	7		4	2	4
BRAZIL	23	49	4	49	4	92	2	88	2	3	3	2	2
CHILE	24	19	9	9	10	20	9	20	9	6	6	5	5
COLOMBIA	25	33	6	32	6	41	5	39	5	3	3	3	3
COSTA RICA	26	8	10	25	8	29	7	29	7	9	6	4	4
DOMINICAN REP	27	43	5	39	5	43	5	41	5	5	5	4	4
ECUADOR	28	19	9	23	8	24	8	25	8	6	4	4	4
EL SALVADOR	29	7	10	8	10	11	10	11	10	9	9	7	7
GUATEMALA	30	10	10	9	10	13	10	12	10	8	9	8	8
HAITI	31			13	10	24	8	23	8		7	3	3
HONDURAS	32	10	10	11	10	11	10	11	10	8	9	9	9
JAMAICA	33			70	3	92	2	107	1		4	3	2
MEXICO	34	287	0	287	0	248	0	175	0	3	3	3	3
NICARAGUA	35	9	10	9	10			11	10	9	9	8	
PANAMA	36	11	10	20	9	36	6	35	6	9	7	6	6

Appendix 2: IIB—The total number of non-financial government enterprises with corresponding index

Country	#	'77		'79		'85		'89		'77	'79	'85	'89
		Total number of enterprises...								Designated areas...			
PARAGUAY	37	12	10	13	10	14	9	14	9	8	8	7	7
PERU	38	39	5	40	5	37	6	37	6	1	2	3	3
URUGUAY	39	18	9	18	9	15	9	15	9	4	6	6	6
VENEZUELA	40	32	6	32	6	60	3	57	3	4	5	3	3
CYPRUS	41	7	10	8	10	12	10	12	10	7	7	6	6
EGYPT	42	49	4	49	4	51	4	66	3	1		0	3
GREECE	43	19	9	36	6	40	5	40	5	8	5	3	3
ISRAEL	44	133	1	107	1	144	1	127	1	3	4	2	2
MALTA	45	50	4	43	5	65	3	66	3	4	3	3	3
PORTUGAL	46			196	0	106	1	122	1		1	2	1
SYRIA	47	24	8	24	8	97	2	102	1	3	4	0	0
TURKEY	48	31	6	31	6	31	6	31	6	3	3	3	3
BANGLADESH	49	31	6	41	5	37	6	37	6	5	4	4	4
FIJI	50	11	10	12	10	14	9	14	9	6	6	6	6
HONG KONG	51												
INDIA	52	146	1	153	0	190	0	205	0	2	2	2	1
INDONESIA	53	110	1	115	1	158	0	161	0	2	2	1	1
KOREA	54	54	4	31	6	27	7	27	7	3	4	4	4
MALAYSIA	55	14	9	13	10	25	8	41	5	7	8	6	4
MAURITIUS	56	15	9	13	10	24	8	29	7	7	7	7	7
PAKISTAN	57	93	2	84	2	85	2	94	2	2	2	2	2
PHILIPPINES	58	26	7	26	7	42	5	50	4	5	5	5	3
SINGAPORE	59	35	6	35	6	28	7	28	7	4	4	5	5
SRI LANKA	60	78	3	120	1	120	1	110	1	0	0	0	0
TAIWAN	61	76	3	76	3					3	3		
THAILAND	62	62	3	61	3	55	4	56	3	2	3	3	3
BOTSWANA	63	29	7	31	6	44	5	45	4	6	6	7	6
CAMEROON	64			21	9	58	3	58	3		6	2	2
COTE D'IVOIRE	65	37	6	47	4	42	5	47	4	4	3	3	4
GABON	66	16	9	20	9	20	9	32	6	5	5	4	3
GHANA	67	49	4	47	4	48	4	50	4	3	3	2	2
KENYA	68	61	3	62	3	128	1	112	1	4	4	2	2
MALAWI	69	27	7	21	9	24	8	24	8	6	6	6	6
MALI	70	7	10	31	6	31	6	28	7	9	2	2	3
MOROCCO	71	35	6	36	6	70	3	70	3	4	4	3	3
NIGERIA	72			55	4	84	2	80	3		3	2	2
SOUTH AFRICA	73	19	9	25	8	29	7	29	7	4	4	4	4

Appendix 2: IIB—The total number of non-financial government enterprises with corresponding index												
Country	#	'77		'79		'85		'89		'77	'79	'85	'89
		Total number of enterprises...								Designated areas...			
SENEGAL	74	41	5	46	4	51	4	47	4	3	3	2	3
TANZANIA	75	116	1	86	2	150	0	178	0	1	1	0	0
TUNISIA	76	8	10	6	10	98	2	100	2	8	9	0	0
ZAIRE	77	153	0	50	4	40	5	40	5	2	4	3	3
ZAMBIA	78	51	4	103	1	133	1	146	1	0	1	0	0
ZIMBABWE	79												
AVERAGE		44.0	6.3	45.4	6.1	61.6	5.1	62.3	5.1	4.7	4.7	3.8	3.8

Appendix 2: IIC—Index ranking of price controls in the economy

Country	#	1989	Country	#	1989
UNITED STATES	1	8	CYPRUS	41	0
CANADA	2	8	EGYPT	42	3
AUSTRALIA	3	6	GREECE	43	0
JAPAN	4	6	ISRAEL	44	0
NEW ZEALAND	5	9	MALTA	45	0
AUSTRIA	6	5	PORTUGAL	46	4
BELGIUM	7	2	SYRIA	47	
DENMARK	8	6	TURKEY	48	8
FINLAND	9	6	BANGLADESH	49	
FRANCE	10	6	FIJI	50	8
GERMANY	11	9	HONG KONG	51	10
ICELAND	12		INDIA	52	3
IRELAND	13	7	INDONESIA	53	6
ITALY	14	5	KOREA	54	3
NETHERLANDS	15	7	MALAYSIA	55	5
NORWAY	16	5	MAURITIUS	56	
SPAIN	17	6	PAKISTAN	57	
SWEDEN	18	6	PHILIPPINES	58	6
SWITZERLAND	19	7	SINGAPORE	59	8
UNITED KINGDOM	20	8	SRI LANKA	60	
ARGENTINA	21	0	TAIWAN	61	6
BOLIVIA	22	6	THAILAND	62	4
BRAZIL	23	0	BOTSWANA	63	6
CHILE	24	8	CAMEROON	64	
COLOMBIA	25	6	COTE D' IVOIRE	65	
COSTA RICA	26		GABON	66	
DOMINICAN REPUBLIC	27		GHANA	67	
ECUADOR	28	0	KENYA	68	3
EL SALVADOR	29		MALAWI	69	3
GUATEMALA	30	6	MALI	70	
HAITI	31		MOROCCO	71	0
HONDURAS	32		NIGERIA	72	6
JAMAICA	33	5	SOUTH AFRICA	73	3
MEXICO	34	0	SENEGAL	74	5
NICARAGUA	35		TANZANIA	75	0
PANAMA	36	3	TUNISIA	76	
PARAGUAY	37	6	ZAIRE	77	
PERU	38	3	ZAMBIA	78	0
URUGUAY	39	5	ZIMBABWE	79	0
VENEZUELA	40	6	AVERAGE		4.6

Country	#	1975		1980		1985		1987	
UNITED STATES	1	9.42%	4	9.38%	4	10.13%	4	9.86%	4
CANADA	2	9.27%	4	9.68%	4	10.50%	3	10.22%	4
AUSTRALIA	3	7.34%	5	8.96%	4	11.08%	3	10.28%	4
JAPAN	4	1.73%	9	1.97%	9	1.70%	9	1.52%	9
NEW ZEALAND	5	11.13%	3	21.99%	0	22.20%	0	23.80%	0
AUSTRIA	6	17.49%	2	18.92%	1	19.99%	1	20.84%	1
BELGIUM	7	23.54%	0	25.89%	0	26.98%	0	26.00%	0
DENMARK	8	7.20%	5	8.27%	4	9.36%	4	9.45%	4
FINLAND	9	13.25%	3	13.27%	3	14.26%	3	14.83%	3
FRANCE	10	22.00%	0	21.87%	0	26.31%	0	26.21%	0
GERMANY	11	14.63%	3	15.15%	3	15.63%	2	15.51%	2
ICELAND	12	12.94%	3	10.55%	3	20.53%	1		
IRELAND	13	16.33%	2	17.33%	2	23.19%	0	22.87%	0
ITALY	14	15.92%	2	14.77%	3	19.14%	1	19.10%	1
NETHERLANDS	15	22.01%	0	25.40%	0	25.00%	0	25.90%	0
NORWAY	16	19.44%	1	21.48%	0	19.61%	1	21.94%	0
SPAIN	17	7.37%	5	12.17%	3	16.32%	2	14.10%	3
SWEDEN	18	14.29%	3	21.82%	0	24.40%	0	25.78%	0
SWITZERLAND	19	9.41%	4	10.68%	3	10.07%	4	10.20%	4
UNITED KINGDOM	20	13.72%	3	14.55%	3	16.04%	2	15.01%	3
ARGENTINA	21	10.71%	3	16.57%	2	15.21%	3	8.09%	5
BOLIVIA	22	1.14%	10	1.56%	9	2.15%	8	1.00%	10
BRAZIL	23	8.23%	4	10.83%	3	8.18%	4	6.56%	5
CHILE	24	10.52%	3	13.13%	3	17.20%	2	15.46%	2
COLOMBIA	25			2.57%	8	3.04%	7	2.74%	8
COSTA RICA	26	4.20%	7	6.25%	5	7.85%	5	7.60%	5
DOMINCAN REP	27	1.51%	9	2.01%	9	2.58%	8	2.12%	8
ECUADOR	28	3.50%	7	5.13%	6	3.90%	7		
EL SALVADOR	29	2.55%	8	2.73%	8	2.08%	9	1.47%	9
GUATEMALA	30	0.78%	10	1.13%	10	1.33%	9	2.06%	9

Appendix 2: IIIA—Transfers and subsidies as a share of GNP with corresponding index.

Appendix 2: IIIA—Transfers and subsidies as a share of GNP with corresponding index.									
Country	#	1975		1980		1985		1987	
HAITI	31					7.35%	5		
HONDURAS	32	0.47%	10						
JAMAICA	33	3.40%	7						
MEXICO	34	3.98%	7	4.38%	7	5.34%	6	2.40%	8
NICARAGUA	35	2.37%	8	4.16%	7	6.91%	5		
PANAMA	36	3.67%	7	4.92%	6	5.51%	5	5.73%	5
PARAGUAY	37	1.77%	9	1.16%	10	2.20%	8	5.30%	6
PERU	38	2.65%	8	2.64%	8	1.82%	9	2.86%	8
URAGUAY	39	12.10%	3	9.48%	4	9.76%	4	11.80%	3
VENEZUELA	40	2.33%	8	1.95%	9	4.70%	6	2.26%	8
CYPRUS	41	10.17%	4	6.78%	5	8.10%	5	7.61%	5
EGYPT	42	25.50%	0	18.37%	2	15.40%	2	11.85%	3
GREECE	43	3.04%	7	11.77%	3	18.16%	2	15.80%	2
ISRAEL	44	18.78%	1	20.99%	1	20.00%	1	16.94%	2
MALTA	45	13.25%	3	11.33%	3	14.48%	3	15.13%	3
PORTUGAL	46	14.63%	3	16.72%	2	20.67%	1	17.43%	2
SYRIA	47	0.00%	10	0.00%	10			2.50%	8
TURKEY	48	6.40%	5	5.39%	6	10.62%	3	6.77%	5
BANGLADESH	49							1.20%	10
FIJI	50	1.93%	9	2.51%	8	4.66%	6	4.65%	6
HONG KONG	51	2.11%	9	2.98%	7	1.46%	9	2.63%	8
INDIA	52	1.19%	10	1.74%	9	2.81%	8	1.00%	10
INDONESIA	53	1.53%	9	3.48%	7	2.71%	8	4.87%	6
KOREA	54	1.57%	9	2.04%	9	2.38%	8	2.03%	9
MALAYSIA	55	6.62%	5	4.94%	6	3.20%	7	3.30%	7
MAURITIUS	56	6.52%	5	6.55%	5	5.45%	5	4.23%	7
PAKISTAN	57	3.06%	7	2.21%	8	0.68%	10	0.78%	10
PHILIPPINES	58	0.84%	10	0.24%	10	0.17%	10	0.41%	10
SINGAPORE	59	1.36%	9	1.15%	10	1.23%	10	2.41%	8
SRI LANKA	60	8.13%	5	8.22%	4	5.30%	6	5.37%	6

Appendix 2: IIIA—Transfers and subsidies as a share of GNP with corresponding index.									
Country	#	1975		1980		1985		1987	
TAIWAN	61	2.15%	8	2.56%	8	3.57%	7	4.08%	7
THAILAND	62	0.60%	10	0.67%	10	1.23%	9	1.12%	10
BOTSWANA	63	2.50%	8	5.32%	6	9.28%	4	8.21%	4
CAMEROON	64			0.83%	10	0.00%	10	2.80%	8
COTE D' IVOIRE	65			4.36%	7				
GABON	66					3.23%	7		
GHANA	67	3.17%	7	2.43%	8	1.34%	9	0.12%	10
KENYA	68	2.77%	8	2.28%	8	3.00%	7	1.98%	9
MALAWI	69	0.89%	10	0.54%	10	0.19%	10	0.22%	10
MALI	70			2.28%	8	2.81%	8	1.11%	10
MOROCCO	71	7.15%	5	5.33%	6	5.35%	6	3.83%	7
NIGERIA	72	2.87%	8	0.40%	10	1.20%	10	1.99%	9
SOUTH AFRICA	73	3.44%	7	3.21%	7	4.82%	6		
SENEGAL	74	2.72%	8	4.34%	7	0.88%	10		
TANZANIA	75	0.12%	10	0.04%	10	4.28%	7		
TUNISIA	76	8.31%	4	4.41%	7	7.14%	5	7.57%	5
ZAIRE	77	1.00%	10	0.61%	10				
ZAMBIA	78	7.56%	5	9.40%	4	4.91%	6	5.94%	5
ZIMBABWE	79	8.15%	4	21.46%	0	9.78%	4	13.28%	3
AVERAGE		7.28%	5.8	8.01%	5.6	8.91%	5.2	8.66%	5.4

COUNTRY	#	1975 Rate	1975 Level		1980 Rate	1980 Level		1984 Rate	1984 Level		1989 Rate	1989 Level	
UNITED STATES	1	70-75	185,000	1	70-75	82,645	0	50-59	156,300	5	33-42	58,937	8
CANADA	2	43-61	130,109	6	47-62	115,840	5	49-60	43,100	3	42-47	35,888	5
AUSTRALIA	3	64	74,348	2	62	51,928	2	60	28,400	2	49	23,555	3
JAPAN	4	68	185,000	2	75	546,694	2	70	305,500	3	65	178,000	3
NEW ZEALAND	5	60	83,642	3	60	31,818	2	66	17,200	0	33	15,194	6
AUSTRIA	6	54	185,000	5	62	153,581	3	62	65,350	2	50	42,728	4
BELGIUM	7	64	185,000	3	76	187,879	0	76	60,600	0	55-65	46,379	2
DENMARK	8	63	37,174	1	66	37,052	0	73	21,400	0	68	24,802	0
FINLAND	9	61-68	111,522	3	65-71	88,843	1	64-70	59,300	1	63-69	47,128	0
FRANCE	10	48	130,109	6	60	126,722	4	65	30,700	1	53	29,929	3
WEST GERMANY	11	56	167,283	4	56	193,939	4	56	39,650	2	56	114,764	4
ICELAND	12												
IRELAND	13	80	46,468	0	60	19,559	1	65	19,000	0	58	20,214	1
ITALY	14	48	185,000	6	72	819,559	2	81	248,200	0	50	180,906	6
NETHERLANDS	15	46	185,000	6	72	127,548	1	72	59,100	0	72	90,675	0
NORWAY	16	74	111,522	1	75	82,645	0	64	32,600	1	54	28,117	3
SPAIN	17	55	185,000	5	66	195,592	2	66	67,700	1	56	57,114	3

Appendix 2: IIIB—Top marginal tax rates, the threshold at which they apply, and the corresponding index ratings.

Appendix 2: IIIB—Top marginal tax rates, the threshold at which they apply, and the corresponding index ratings.

COUNTRY	#	Rate	1975 Level		Rate	1980 Level		Rate	1984 Level		Rate	1989 Level	
SWEDEN	18	70	74,348	1	87	53,306	0	80	38,100	0	72	24,346	0
SWITZERLAND	19	38-42	111,522	8	31-44	76,171	6	33-46	145,300	8	26-32	299,428	10
UNITED KINGDOM	20	41	185,000	7	83	66,942	0	60	40,100	2	40	24,700	5
ARGENTINA	21	51	65,055	4	45	101,515	7	62	65,400	2	35	40,465	7
BOLIVIA	22				48	15,152	3	30	45	8	10	1	10
BRAZIL	23	50	65,055	5	55	105,234	5	60	10,400	1	25	1,434	8
CHILE	24	80	185,000	0	60	42,424	2	57	3,600	1	50	3,709	3
COLOMBIA	25	41	111,522	7	56	36,501	2	49	55,400	5	30	32,822	8
COSTA RICA	26	50	83,642	5	50	56,061	5	50	2,200	3	25	9,843	8
DOMINICAN REPUBLIC	27	49	185,000	6				73.1	497,238	2	73	183,000	1
ECUADOR	28	50	148,696	6	50	150,000	6	58	27,800	2	40	21,787	5
EL SALVADOR	29	55	185,000	5	60	137,741	4	48	11,700	3	60	39,370	2
GUATEMALA	30	34	185,000	9	40	688,705	9	48	324,350	7	34	3,791	6
HAITI	31										30	193,000	10
HONDURAS	32	27	185,000	10	40	688,705	9	46	476,400	7	46	393,701	7
JAMAICA	33	60	27,881	2	80	23,967	0	58	2,400	1	33	1,489	6
MEXICO	34	47	83,642	5	55	90,634	4	55	59,300	4	40	8,900	5

COUNTRY	#	1975			1980			1984			1989		
		Rate	Level		Rate	Level		Rate	Level		Rate	Level	
NICARAGUA	35	21	185,000	10	50	275,482	7	50	67,600	5			
PANAMA	36	52	185,000	5	56	275,482	5	56	192,500	4	56	157,480	4
PARAGUAY	37							30	8,200	7	30	3,822	7
PERU	38	51	55,761	4	65	53,719	2	65	40	0	45	12,558	4
URAGUAY	39	41	185,000	7	0		10	0		10	0	10	
VENEZUELA	40	20	185,000	10	45	1,350,000	8	45	1,110,000	8	45	234,000	8
CYPRUS	41	54	37,174	3	60	19,146	1	60	20,900	1	62	18,547	0
EGYPT	42				80	196,832	0	65	148,000	3	65	61,750	2
GREECE	43	52	130,109	5	60	113,223	4	63	36,500	1	50	28,594	4
ISRAEL	44				66	70,000	1	60	55,000	3	51	82,000	4
MALTA	45				65	18,000	0	65	10,000	0	65	3,030	0
PORTUGAL	46	82	167,283	0	84	28,788	0	69	39,900	0	40	16,171	5
SYRIA	47												
TURKEY	48				75	60,000	0	60	53,800	3	50	32,800	4
BANGLADESH	49				60	10,000	1						
FIJI	50	53	27,000	3	53	13,774	2	50	16,650	3	50	21,872	3
HONG KONG	51	15	27,881	10	15	28,512	10	25	4,900	8	25	7,066	8

Appendix 2: IIIB—Top marginal tax rates, the threshold at which they apply, and the corresponding index ratings.

Appendix 2: IIIB—Top marginal tax rates, the threshold at which they apply, and the corresponding index ratings.

COUNTRY	#	Rate	1975 Level		Rate	1980 Level		Rate	1984 Level		Rate	1989 Level	
INDIA	52	77	13,940	0	60	16,529	1	62	7,700	0	53	5,194	2
INDONESIA	53	48	37,174	4	50	21,212	3	35	44,750	7	35	22,731	6
SOUTH KOREA	54				89	238,567	0	65	69,600	2	60	110,000	4
MALAYSIA	55	50	46,468	4	60	47,383	2	45	117,300	7	45	90,161	6
MAURITIUS	56				50	20,000	3	35	10,000	6	35	2,750	6
PAKISTAN	57	61	27,881	1	55	6,887	2	60	6,500	1	50	8,394	3
PHILIPPINES	58	56	167,000	4	70	94,353	1	60	24,350	1	35	18,031	6
SINGAPORE	59	55	83,642	4	55	255,096	6	40	325,000	9	33	161,850	9
SRI LANKA	60				60.5	3,500	1						
TAIWAN	61	60	111,522	4	60	110,000	4	60	100,000	4	50	97,658	5
THAILAND	62	60	111,522	4	60	68,871	3	65	70,700	2	55	62,270	4
BOTSWANA	63	75	83,642	0	75	66,116	0	60	34,300	2	50	16,472	3
CAMEROON	64							60	30,000	2	60	20,600	1
COTE D'IVOIRE	65				45	38,500	5						
GABON	66												
GHANA	67	70	22,000	0	60	700	1	60	400	1			
KENYA	68	70	46,468	0	65	27,500	1	65	9,900	0	50	400	3

Appendix 2: IIIB—Top marginal tax rates, the threshold at which they apply, and the corresponding index ratings.

COUNTRY	#	Rate	1975 Level		Rate	1980 Level		Rate	1984 Level		Rate	1989 Level	
MALAWI	69	38	27,881	6	45	20,937	4	50	13,500	3	50	7,194	3
MALI	70												
MOROCCO	71	39	185,000	8	64	261,570	4	87	75,500	0	87	28,699	0
NIGERIA	72	75	74,348	0	70	62,000	1	55	40,000	3	55	4,200	2
SOUTH AFRICA	73	66	83,642	1	60	45,868	2	50	19,250	3	45	26,456	5
SENEGAL	74							65	38,232	1	48	31,000	4
TANZANIA	75	80	74,000	0				95	19,293	0	50	1,200	3
TUNISIA	76				62.3	300,000	4						
ZAIRE	77	60	37,174	2	60	8,540	1	60	1,350	1	60	854	1
ZAMBIA	78	70	37,174	0	70	22,452	0	80	10,700	0	75	2,375	0
ZIMBABWE	79				45	34,435	5	63	22,200	0	60	13,287	1

Country	#	74-75		78-79		84-85		89-90	
UNITED STATES	1	0.00	10	0.00	10	0.00	10	0.00	10
CANADA	2	0.00	10	0.00	10	0.00	10	0.00	10
AUSTRALIA	3	0.00	10	0.00	10	0.00	10	0.00	10
JAPAN	4	0.00	10	0.00	10	0.00	10	0.00	10
NEW ZEALAND	5	0.00	10	0.00	10	0.00	10	0.00	10
AUSTRIA	6	3.31	6	2.53	8	4.27	5	2.71	7
BELGIUM	7	9.15	2	2.62	8	3.22	6	3.69	6
DENMARK	8	7.33	2	2.42	8	1.84	8	1.79	8
FINLAND	9	5.99	2	6.71	2	5.17	3	4.76	4
FRANCE	10	5.22	3	4.94	4	4.49	4	4.30	5
GERMANY	11	3.86	5	3.72	6	3.75	5	3.63	6
ICELAND	12	0.00	10	0.00	10	0.00	10	0.00	10
IRELAND	13	0.00	10	0.00	10	0.00	10	0.00	10
ITALY	14	7.64	2	3.98	5	4.12	5	4.73	4
NETHERLANDS	15	8.44	2	3.52	6	3.20	7	3.35	6
NORWAY	16	5.73	2	6.93	2	5.43	3	5.18	3
SPAIN	17	8.06	2	5.21	3	5.52	3	5.35	3
SWEDEN	18	6.58	2	5.61	3	5.71	2	5.84	2
SWITZERLAND	19	5.47	3	2.87	7	3.08	7	3.26	6
UNITED KINGDOM	20	0.00	10	0.00	10	0.00	10	0.00	10
ARGENTINA	21	5.48	3	5.04	3	3.66	6	1.21	9
BOLIVIA	22	4.40	4	3.69	6	4.42	4	2.72	7
BRAZIL	23	1.99	8	0.98	9	1.02	9	0.99	9
CHILE	24	5.75	2	1.95	8	2.75	7	2.57	8
COLOMBIA	25	2.64	7	2.80	7	1.01	9	1.32	9
COSTA RICA	26	0.00	10	0.00	10	0.00	10	0.00	10
DOM. REP.	27	3.47	6	0.00	10	0.00	10	0.00	10
ECUADOR	28	3.20	7	3.25	6	4.05	5	4.05	5
EL SALVADOR	29	1.30	9	1.60	8	7.86	2	9.45	2
GUATEMALA	30	1.99	8	2.26	8	4.88	4	4.80	4

Table title (above Country header row):

Appendix 2: IIIC—Conscripts per 1000 population with corresponding index ratings

Appendix 2: IIIC—Conscripts per 1000 population with corresponding index ratings									
Country	#	74-75		78-79		84-85		89-90	
HAITI	31	0.00	10	0.00	10	0.00	10	0.00	10
HONDURAS	32			0.00	10	2.88	7	2.69	7
JAMAICA	33							0.00	10
MEXICO	34	4.43	4	3.74	5	3.21	7	0.71	9
NICARAGUA	35	3.36	6	2.98	7	19.31	0	8.10	2
PANAMA	36	0.00	10	0.00	10	0.00	10	0.00	10
PARAGUAY	37	5.40	3	5.92	2	3.03	7	2.38	8
PERU	38	3.51	6	2.87	7	3.59	6	3.66	6
URAGUAY	39	0.00	10	0.00	10	0.00	10	0.00	10
VENEZUELA	40	3.37	6	3.36	6	0.64	9	0.94	9
CYPRUS	41			16.08	0	15.06	0	18.73	0
EGYPT	42	8.83	2	9.93	2	5.40	3	4.62	4
GREECE	43	12.49	1	16.06	0	13.43	1	14.20	1
ISRAEL	44	34.36	0	32.98	0	23.40	0	24.22	0
MALTA	45	0.00	10	0.00	10	0.00	10	0.00	10
PORTUGAL	46	23.59	0	6.97	2	3.70	6	4.55	4
SYRIA	47	19.28	0	28.05	0	11.54	1	34.50	0
TURKEY	48	11.63	1	8.57	2	11.19	2	10.37	2
BANGLADESH	49	0.00	10	0.00	10	0.00	10	0.00	10
FIJI	50					0.00	10	0.00	10
HONG KONG	51	0.00	10	0.00	10	0.00	10	0.00	10
INDIA	52	0.00	10	0.00	10	0.00	10	0.00	10
INDONESIA	53	2.13	8	1.77	8	1.78	8	1.62	8
KOREA	54	18.52	0	17.86	0	14.95	1	15.10	0
MALAYSIA	55	0.00	10	0.00	10	0.00	10	0.00	10
MAURITIUS	56	0.00	10	0.00	10	0.00	10	0.00	10
PAKISTAN	57	6.67	2	0.00	10	0.00	10	0.00	10
PHILIPPINES	58	1.33	9	2.12	8	0.00	10	0.00	10
SINGAPORE	59	9.73	2	15.16	0	13.65	1	13.09	1
SRI LANKA	60	0.00	10	0.00	10	0.00	10	0.00	10

Appendix 2: IIIC—Conscripts per 1000 population with corresponding index ratings									
Country	#	74-75		78-79		84-85		89-90	
TAIWAN	61	30.69	0	26.89	0	24.69	0	19.34	0
THAILAND	62	5.07	3	4.57	4	4.64	4	5.18	3
BOTSWANA	63	0.00	10	0.00	10	0.00	10	0.00	10
CAMEROON	64	0.00	10	0.00	10	0.00	10	0.00	10
COTE D' IVOIRE	65	0.73	9	0.94	9	1.23	9	0.64	9
GABON	66			0.00	10	0.00	10	0.00	10
GHANA	67	0.00	10	0.00	10	0.00	10	0.00	10
KENYA	68	0.00	10	0.00	10	0.00	10	0.00	10
MALAWI	69	0.00	10	0.00	10	0.00	10	0.00	10
MALI	70	0.67	9	0.68	9	0.64	9	0.80	9
MOROCCO	71	3.33	6	4.79	4	6.17	2	8.01	2
NIGERIA	72	0.00	10	0.00	10	0.00	10	0.00	10
SOUTH AFRICA	73	2.00	8	2.50	8	2.50	8	1.81	8
SENEGAL	74	1.37	9	1.38	9	1.54	8	1.36	9
TANZANIA	75	0.00	10	0.00	10	0.00	10	0.82	9
TUNISIA	76	3.77	5	2.08	8	1.86	8	3.46	6
ZAIRE	77	0.00	10	0.00	10	0.00	10	0.00	10
ZAMBIA	78	0.00	10	0.00	10	0.00	10	0.00	10
ZIMBABWE	79	0.00	10	0.00	10	0.00	10	5.20	3
AVERAGE		4.37	6.4	3.78	7.1	3.45	7.1	3.57	7.1

Appendix 2: IVA—Taxes on international trade as a share of the trade sector with corresponding index								
Country	#	1975		1980		1985		1987	
UNITED STATES	1	2.990%	8	2.269%	8	3.016%	8	3.136%	8
CANADA	2	7.344%	6	4.768%	7	3.340%	7	3.112%	8
AUSTRALIA	3	8.768%	6	7.263%	6	7.563%	6	7.177%	6
JAPAN	4	1.871%	8	1.781%	8	1.448%	8	1.704%	8
NEW ZEALAND	5	4.860%	7	3.589%	7	4.069%	7	4.720%	7
AUSTRIA	6	3.292%	7	1.426%	8	1.199%	8	1.461%	8
BELGIUM	7	0.019%	10	0.005%	10	0.003%	10	0.031%	10
DENMARK	8	0.142%	9	0.099%	9	0.077%	9	0.080%	9
FINLAND	9	3.229%	8	1.619%	8	0.831%	8	1.038%	8
FRANCE	10	0.092%	9	0.097%	9	0.054%	9	0.055%	9
GERMANY	11	0.031%	10	0.019%	10	0.010%	10	0.012%	10
ICELAND	12	16.113%	2	13.060%	4	9.077%	5		
IRELAND	13	9.636%	5	6.361%	6	5.083%	7	5.834%	6
ITALY	14	0.515%	9	0.075%	9	0.045%	10	0.052%	9
NETHERLANDS	15	2.660%	8	0.006%	10	0.000%	10	0.000%	10
NORWAY	16	1.023%	8	0.601%	9	0.501%	9	0.748%	9
SPAIN	17	12.210%	4	8.667%	6	5.857%	6	4.197%	7
SWEDEN	18	2.131%	8	1.325%	8	0.650%	9	0.669%	9
SWITZERLAND	19	6.994%	6	4.835%	7	3.896%	7	4.249%	7
UNITED KINGDOM	20	0.768%	9	0.083%	9	0.008%	10	0.144%	9
ARGENTINA	21	20.870%	1	23.778%	0	24.923%	0	19.170%	1
BOLIVIA	22	17.241%	2	15.652%	2	0.013%	10	0.008%	10
BRAZIL	23	0.011%	10	0.015%	10	0.006%	10	0.007%	10
CHILE	24	11.123%	4	5.572%	7	11.389%	4	9.090%	5
COLOMBIA	25	14.799%	2	15.518%	2	13.841%	3	15.699%	2
COSTA RICA	26	11.745%	4	10.509%	5	13.606%	3	14.802%	2
DOMINCAN REP	27	32.233%	0	19.497%	1	13.697%	3	19.635%	1
ECUADOR	28	17.767%	1	15.581%	2	12.419%	4	9.650%	5
EL SALVADOR	29	12.795%	4	12.479%	4	14.264%	2	13.290%	3
GUATEMALA	30	11.241%	4	14.381%	2	9.649%	5	19.533%	1

Appendix 2: IVA—Taxes on international trade as a share of the trade sector with corresponding index

Country	#	1975		1980		1985		1987	
HAITI	31			19.711%	1	16.068%	2	13.647%	3
HONDURAS	32	10.645%	5	13.438%	3	16.700%	2	14.200%	2
JAMAICA	33	7.979%	6	1.864%	8				
MEXICO	34	15.517%	2	34.901%	0	5.112%	7	12.889%	4
NICARAGUA	35	9.764%	5	17.400%	1	10.524%	5	2.828%	8
PANAMA	36	6.789%	6	6.039%	6	8.439%	6	9.769%	5
PARAGUAY	37	17.622%	1	12.083%	4	4.255%	7	4.395%	7
PERU	38	18.891%	1	20.752%	1	17.646%	1	18.274%	1
URUGUAY	39	6.828%	6	17.745%	1	11.465%	4	14.897%	2
VENEZUELA	40	7.651%	6	5.969%	6	17.947%	1	24.928%	0
CYPRUS	41	6.908%	6	7.999%	6	8.841%	6	9.319%	5
EGYPT	42	33.427%	0	26.152%	0	24.120%	0	23.073%	0
GREECE	43	6.873%	6	6.459%	6	0.664%	9	0.180%	9
ISRAEL	44	13.333%	3	4.000%	7	5.769%	6	4.861%	7
MALTA	45	9.185%	5	9.741%	5	8.912%	5	9.148%	5
PORTUGAL	46	9.216%	5	4.228%	7	2.505%	8	1.901%	8
SYRIA	47	16.950%	2	14.242%	2			6.788%	6
TURKEY	48	28.800%	0	12.652%	4	5.924%	6	6.203%	6
BANGLADESH	49	21.859%	1	26.823%	0	35.764%	0	27.331%	0
FIJI	50	13.251%	3	11.552%	4	15.748%	2	15.345%	2
HONG KONG	51	1.458%	8	0.699%	9	0.643%	9	0.764%	9
INDIA	52	29.544%	0	31.040%	0	48.478%	0	55.837%	0
INDONESIA	53	7.997%	6	5.782%	6	3.170%	8	7.253%	6
KOREA	54	6.134%	6	7.114%	6	7.190%	6	7.895%	6
MALAYSIA	55	14.083%	2	15.422%	2	10.752%	5	7.085%	6
MAURITIUS	56	14.128%	2	21.732%	1	19.283%	1	17.008%	2
PAKISTAN	57	30.636%	0	30.571%	0	30.019%	0	32.471%	0
PHILIPPINES	58	26.770%	0	13.509%	3	13.834%	3	15.326%	2
SINGAPORE	59	1.486%	8	0.942%	8	0.724%	9	0.549%	9
SRI LANKA	60	22.265%	1	23.434%	0	21.172%	1	21.665%	1

Appendix 2: IVA—Taxes on international trade as a share of the trade sector with corresponding index								

Country	#	1975		1980		1985		1987	
TAIWAN	61	9.669%	5	7.196%	6	5.713%	7	4.564%	7
THAILAND	62	16.563%	2	13.756%	3	12.967%	4	11.074%	4
BOTSWANA	63	20.787%	1	25.500%	0	15.221%	2	11.081%	4
CAMEROON	64	26.874%	0	21.997%	1	12.181%	4	18.690%	1
COTE D' IVOIRE	65	0.027%	10	25.559%	0	19.402%	1		
GABON	66					13.482%	3		
GHANA	67	42.685%	0	34.538%	0	38.084%	0	26.146%	0
KENYA	68	10.935%	5	12.126%	4	13.758%	3	16.281%	2
MALAWI	69	7.504%	6	13.154%	4	17.751%	1	12.530%	4
MALI	70	28.180%	0	7.615%	6	9.654%	5	17.060%	2
MOROCCO	71	15.025%	2	21.361%	1	12.779%	4	12.072%	4
NIGERIA	72	13.279%	3	8.900%	5	10.345%	5	3.965%	7
SOUTH AFRICA	73	4.050%	7	2.420%	8	2.792%	8	3.619%	7
SENEGAL	74	33.329%	0	22.832%	0				
TANZANIA	75	14.652%	2	15.442%	2	12.491%	4		
TUNISIA	76	21.394%	1	17.986%	1	26.608%	0	21.809%	1
ZAIRE	77	37.694%	0	20.527%	1	17.017%	2	16.664%	2
ZAMBIA	78	5.223%	7	4.784%	7	13.675%	3	16.943%	2
ZIMBABWE	79			3.335%	7	16.064%	2	17.772%	1
AVERAGE		12.610%	4.4	11.461%	4.6	10.555%	5.1	10.348%	5.0

Appendix 2: IVB—Actual trade sector size minus predicted trade sector size with corresponding index								
Country	#	1975		1980		1985		1987	
UNITED STATES	1	-2.07%	6	-2.72%	5	-2.90%	5	-1.30%	6
CANADA	2	-1.80%	6	-2.74%	5	-2.47%	6	-3.20%	5
AUSTRALIA	3	-14.14%	1	-15.67%	1	-13.62%	1	-14.15%	1
JAPAN	4	-4.35%	5	-5.56%	4	-5.89%	4	-7.87%	3
NEW ZEALAND	5	-15.81%	1	-15.49%	1	-11.81%	2	-18.76%	0
AUSTRIA	6	-5.48%	5	-3.28%	5	-1.01%	6	-5.07%	5
BELGIUM	7	9.31%	9	19.78%	9	30.60%	10	22.28%	9
DENMARK	8	-10.05%	2	-9.89%	2	-6.55%	4	-11.50%	2
FINLAND	9	-13.30%	1	-10.76%	2	-15.36%	1	-17.47%	1
FRANCE	10	-5.47%	5	-4.90%	5	-3.64%	5	-5.13%	5
GERMANY	11	2.45%	7	3.04%	7	6.57%	8	3.78%	8
ICELAND	12	-15.30%	1	-22.04%	0	-19.04%	0	-20.11%	0
IRELAND	13	4.52%	8	8.59%	9	22.55%	10	18.16%	9
ITALY	14	-5.40%	5	-6.18%	4	-5.58%	4	-8.01%	3
NETHERLANDS	15	15.71%	9	16.03%	9	23.78%	10	14.43%	9
NORWAY	16	3.53%	7	0.31%	7	-1.52%	6	-6.45%	4
SPAIN	17	-6.22%	4	-9.95%	2	-5.70%	4	-7.92%	3
SWEDEN	18	-7.37%	3	-8.36%	3	-5.51%	4	-6.80%	3
SWITZERLAND	19	-5.80%	4	-1.41%	6	-2.86%	5	-4.30%	5
UNITED KINGDOM	20	2.38%	7	-1.78%	6	0.77%	7	-0.10%	7
ARGENTINA	21	-11.54%	2	-5.93%	4	-6.70%	3	-11.59%	2
BOLIVIA	22	-3.97%	5	-19.80%	0	-31.36%	0	-24.70%	0
BRAZIL	23	-11.06%	2	-15.83%	1	-12.45%	2	-14.25%	1
CHILE	24	-5.07%	5	-13.18%	1	-3.41%	5	-0.71%	6
COLOMBIA	25	-9.20%	3	-11.44%	2	-13.34%	1	-8.21%	3
COSTA RICA	26	-8.74%	3	-14.77%	1	-9.99%	2	-5.94%	4
DOMINICAN REPUBLIC	27	2.62%	7	-13.81%	1	-6.31%	4	-0.50%	6
ECUADOR	28	-1.66%	6	-9.37%	3	-10.19%	2	-7.46%	3
EL SALVADOR	29	-2.32%	6	-7.97%	3	-12.98%	1	-16.79%	1

Appendix 2: IVB—Actual trade sector size minus predicted trade sector size with corresponding index

Country	#	1975		1980		1985		1987	
GUATEMALA	30	-13.41%	1	-14.09%	1	-18.77%	0	-12.60%	2
HAITI	31	-16.91%	1	-10.70%	2	-18.10%	1	-21.06%	0
HONDURAS	32	-5.75%	4	0.07%	7	-9.49%	2	-12.43%	2
JAMAICA	33	-5.93%	4	-1.99%	6	28.49%	10	18.01%	9
MEXICO	34	-8.81%	3	3.18%	7	-10.35%	2	-12.41%	2
NICARAGUA	35	-10.40%	2	-8.98%	3	-18.05%	1	-28.57%	0
PANAMA	36	3.36%	7	-2.80%	5	-10.89%	2	-13.98%	1
PARAGUAY	37	-22.90%	0	-23.07%	0	-21.45%	0	-21.01%	0
PERU	38	-8.57%	3	-4.24%	5	-9.30%	3	-15.90%	1
URUGUAY	39	-25.99%	0	-23.87%	0	-21.27%	0	-21.84%	0
VENEZUELA	40	-6.80%	3	-10.56%	2	-6.19%	4	-0.56%	6
CYPRUS	41	-9.86%	2	-5.57%	4	-3.48%	5	-9.32%	3
EGYPT	42	20.40%	9	21.00%	9	11.21%	9	5.54%	8
GREECE	43	-13.74%	1	-15.85%	1	-14.16%	1	-14.85%	1
ISRAEL	44	-0.39%	6	0.84%	7	2.72%	7	-0.79%	6
MALTA	45	21.92%	9	25.35%	10	12.84%	9	17.07%	9
PORTUGAL	46	-7.22%	3	-3.07%	5	0.79%	7	-1.87%	6
SYRIA	47	-3.99%	5	-9.23%	3	-14.66%	1	-21.63%	0
TURKEY	48	-3.01%	5	-14.42%	1	-4.27%	5	-3.68%	5
BANGLADESH	49	-6.25%	4	-0.24%	6	5.54%	8	0.79%	7
FIJI	50	-8.80%	3	-5.93%	4	-6.91%	3	-10.20%	2
HONG KONG	51	58.82%	10	64.84%	10	59.02%	10	74.21%	10
INDIA	52	14.45%	9	13.38%	9	23.76%	10	29.05%	10
INDONESIA	53	7.08%	8	7.63%	8	2.94%	7	9.18%	9
KOREA	54	6.56%	8	9.85%	9	9.64%	9	15.32%	9
MALAYSIA	55	15.26%	9	26.40%	10	23.57%	10	27.62%	10
MAURITIUS	56	6.83%	8	1.39%	7	8.20%	9	20.11%	9
PAKISTAN	57	8.92%	9	7.64%	8	7.52%	8	10.12%	9
PHILIPPINES	58	8.56%	9	-0.79%	6	-2.42%	6	2.61%	7
SINGAPORE	59	69.89%	10	139.92%	10	83.54%	10	99.01%	10

Country	#	1975		1980		1985		1987	
		Appendix 2: IVB—Actual trade sector size minus predicted trade sector size with corresponding index							
SRI LANKA	60	6.87%	8	16.22%	9	5.21%	8	4.81%	8
TAIWAN	61	11.42%	9	18.75%	9	13.58%	9	16.00%	9
THAILAND	62	1.44%	7	3.47%	7	2.96%	7	6.36%	8
BOTSWANA	63	17.40%	9	14.37%	9	18.14%	9	35.22%	10
CAMEROON	64	-0.28%	6	-3.90%	5	-6.16%	4	-11.97%	2
COTE D'IVOIRE	65	-1.92%	6	8.80%	9	11.86%	9	1.07%	7
GABON	66					5.14%	8	11.50%	9
GHANA	67	3.27%	7	-14.95%	1	-7.52%	3	-1.71%	6
KENYA	68	2.78%	7	2.67%	7	-2.14%	6	-2.42%	6
MALAWI	69	-2.80%	5	-5.51%	4	-7.14%	3	-10.38%	2
MALI	70	-6.67%	3	-16.81%	1	-1.08%	6	-8.68%	3
MOROCCO	71	1.60%	7	-1.74%	6	4.35%	8	0.09%	7
NIGERIA	72	4.04%	8	0.13%	7	-6.74%	3	8.64%	9
SOUTH AFRICA	73	0.20%	7	-0.56%	6	-1.73%	6	-4.18%	5
SENEGAL	74	14.42%	9	2.50%	7	2.20%	7	-5.79%	4
TANZANIA	75	-1.48%	6	-10.35%	2	-19.23%	0	-0.47%	6
TUNISIA	76	3.00%	7	7.64%	8	7.05%	8	5.43%	8
ZAIRE	77	3.75%	8	0.57%	7	22.44%	9	14.04%	9
ZAMBIA	78	8.54%	9	2.11%	7	1.52%	7	12.29%	9
ZIMBABWE	79	-3.33%	5	-4.41%	5	-6.80%	3	-6.18%	4
AVERAGE		0.00%	5.4	0.00%	5.0	0.00%	5.1	0.00%	5.0

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Discussion

Milton Friedman argued that money and prices should not be in the index.
Insofar as inflation is a tax on money it is being counted twice as it is counted
as social expenditures. Insofar as instability of money is being regarded as
economic freedom, then the standard deviation or some measure of price
change should be there. (This was done in the revised version of the paper
presented in this volume.) He did not think that growth rates of money or
inflation should be there. Although it is true on average that high rates of
inflation are associated with more variability of inflation, it is not direct
enough to be useful in this context. Friedman remarked that he did not
know what to define as a monetary system consistent with complete
economic freedom. Clearly there is no such system in modern times. What
should be the baseline? Is monetary freedom a contribution to economic
freedom or a contribution to wealth?

Ronald Jones continued this theme by pointing out that if the govern-
ment does something that changes relative prices, then you get gains and
losses. Should that be counted as a loss in freedom? Referring to the
analysis in his paper with Alan Stockman he concludes a loss occurs only
if the markets are impeded. If, as Gwartney, Block and Lawson argue, the
price level changes due to government action which alters the nature of
contracts, so long as contract formation is not impeded, this is not a loss in
freedom.

Juan Bendfeldt felt that when the value of money is destroyed it does
reduce economic freedom, and that right now the U.S. dollar functions as
a world money. But Milton Friedman argued that this still does not help us
establish a norm for monetary systems. Alan Stockman suggested that we
may still want to measure the way in which resources are extracted from
the economy as some may lead to greater violations of economic freedom
than others, for instance, different types of taxation. But there is another
issue which is one of regulation. Can you enforce, in courts, contracts
written in various currencies. Does government money compete with

private money? John Chant remarked that although the time dimension for contracts is dealt with in the paper, he did not recall seeing measures of interest rate control—usury laws and the like, or other measures of the regulation of financial intermediation.

Walter Block felt that there was some double counting but that it was not too serious as some losses were probably missed. A measure of standard deviation would be an acceptable measure. His view was that the best system from the point of view of economic freedom was the gold standard. Richard Stroup suggested that the budget does capture losses in freedom except when there is a restriction of alternatives. If gold is not forbidden, then it is not clear what the restriction on freedom is beyond the budget itself. Zane Spindler made the point that only a part of the inflation tax would show up in government expenditures in a fractional reserve banking system.

Arthur Densau suggested that there are more subtle issues having to do with government credibility associated with particular monetary regimes and policies. Michael Walker drew an analogy to the imposition of rent control policies which, even when removed, were always remembered as a potential instrument of intervention. Milton Friedman interpreted the discussion to parallel the debate about what goes into a constitution. A country that has certain guarantees of economic freedom will be freer than if that guarantee is left to current legislation. Spindler noted that this may just increase the cost of rent-seeking as now rent-seekers will have to go for constitutional reform rather than simple legislative changes. Block thought that although integral to the idea of economic freedom, we may not have the ability to quantify the economic freedom potential at different levels of the political process.

Alan Stockman wondered about the use of the term discriminatory taxation in the paper. What isn't? Just count all taxes as contributing to the loss in economic freedom. Similarly, the discussion of taxation for public goods must be mirrored by a discussion of public bads. James Gwartney tried to clarify that the concept of discriminatory taxation is that the amount of tax is in no way tied to the amount of benefit you receive from direct government spending or through the provision of public goods. A better term might be a disproportionate tax.

In a more general reaction to the comments, Gwartney liked the idea of a variance measure of inflation, but felt that growth, economic freedom and credibility were very difficult issues.

Prospecting for the "Homework" Measures of Economic Freedom: A Summary

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> "If it is worth doing, it is worth doing imperfectly."
> —W. Block [2]

Introduction

WE STARTED OUR PAPER ENTITLED "The 'Homework' Measures of Economic Freedom," which was prepared for the "Rating Economic Freedom IV Symposium" with the aphorism given above. It was gleaned from Walter Block's remarks at the end of the "Rating Economic Freedom

II Symposium." In those remarks, Block listed the freedom measures that are the subject of this paper. These diverse measures were suggested by various Symposium II participants as part of their "homework" assigned in an earlier session. This aphorism and historical note were intended to explain our paper's title and subsequent designation of the freedom measures contained within, as well as our meta-methodological perspective.

Our task for the Fourth Symposium was to explore whether the measures listed had statistical analogues in data collected or processed by others. In our explorations, we neither searched for nor obtained perfection. Instead, what we did was a rather exhaustive (or at least exhausting!) search of existing literature and data sources for measures which at least approximated the (sometimes fuzzy) "Homework Measure of Freedom" desiderata. We then used that data to make a first stab at providing ratings for each measure when ratings were not given by the original source. We also tried to be more or less methodical about marking our path and providing some commentary on the problems of, and reasons for, treading it.

Further, in an attempt to make some sense of these fairly diverse measures, we separated them into documentation, discussion, and presentation sections. In order, these sections were government size, tax measures, government regulation, indirect measures and civil rights measures.

Where possible, we also calculated Spearman Rank Correlations between measures within sections and across sections. These correlations suggested that a few alternative measures within sections, and even across sections, were sometimes reasonably close substitutes in terms of measuring the extent of freedom in any given country. That in turn suggested that our resources might be better devoted to developing to a higher state of perfection fewer key indicators.

Since our original paper was very long, we have chosen to incorporate only the essential elements from our data explorations into a summary section giving a "concordance" between the original descriptions given in Block's listing and our versions of the "homework" measures along with our sources and rating scheme. Our original discussions, rationales and source data can be found in our original paper which, for a limited time, will be available from the authors or The Fraser Institute. We have also included our summary statistics, and, of course, our summary table of country economic freedom ratings.

Table 1. Basic Data Matrix

Category	1	2	3	5	6	7	8f	9a	9b	10	11	12	14	15	16	17	18	19	20	21	22	23	24
Year	88	80	81	85	81	85	*	85	87	75	87	80	60	85	80	89	87	80	88	80-84	88	80	81
Afghanistan				5			2																
Albania				5																			
Algeria			1		1		5				5	2	1										
Argentina		3	2	4	1		1				3	5	3	3	3	5		3	1				
Australia	2	2	1	4	1	4		3	2			1	2	3	3	3	2	2		5	1		
Austria	1	5	1	4	1	5				3		4	2	3	1		2	5	1	2	2	5	1
Bahamas						3					5	2	2		3								
Bahrain			1									2	2		4								
Bangladesh			2		2		1	2			5	1	3	2			2						
Barbados								3			5	4	3		2		5						
Belgium	2	5	1		1	5		3	2	4		5	5		2	5	4	1					
Benin			2	5	1		1				5											1	2
Bolivia		2	1	5	1		5	1			4	2						1	5	5			1
Botswana			1		1	5		5	1		5	3				3	5			2		2	1
Brazil			1	4	1	3	1	1			3	3					5	3	2	4	5		1
Brunei																							
Bulgaria			5	5	5																		4
Burkina Faso			3				1													2			
Burma						2	4	2					4					1	5	1			
Burundi			4				2	2			5								2	2		1	
Cameroon			2	3	4	3	1	3			4	4				1	5		4	2		1	1
Canada	2	2	1	5	1	5		2		3		4	2	2	1	2		4	1	2	1	4	1

Table 1. Basic Data Matrix

Category	1	2	3	5	6	7	8f	9a	9b	10	11	12	14	15	16	17	18	19	20	21	22	23	24
Year	88	80	81	85	81	85	*	85	87	75	87	80	60	85	80	89	87	80	88	80-84	88	80	81
C. African Rep.				5			1				5									2			
Chile		3	2	3	2		1	3			3	3	3				5	2		3	5		5
China			4	5	4		3	3	5		5					1	5			1			2
Colombia			1	2	4		1				4	2					2	1		3	3		1
Congo				5			1				5						5			2			
Costa Rica		3	1	5	1		1	3			4	3					3	2		3	2		1
Cuba			5	5	1										1								4
Cypress																							
Cyprus				3		4		3			5							3		2		2	
Czechoslovakia			5	5	2										1								4
Denmark	1	4	1	5	1			5	1	3		5	1	2	3	3	5	1		2	4	5	1
Dominica				2							5									2			
Dominica R.			1	2	1		1	2				2	3			1	1	1	3	2			1
Ecuador		3	2	3	1		1				4	2					2		4	3	2		1
Egypt			4	1	2		1	5			4						5	5	4	2	5	3	1
El Salvador			4			2	4	2			4	2					5			2	2		
Ethiopia			5	5	5		2	3			5	2						2		2			4
Fiji			1			4		3	5		3		3			1	5			2			
Finland	1	4	1		1	4		3		3		5	2	5	1	3	3	4	1	2	5	5	1
France	1	3	1	5	1			4		3		5	2	3	5		4	4	1	2	4	3	1
Gabon											5		5				5			2			
Gambia											5							3		2			

Table 1. Basic Data Matrix

Category	1	2	3	5	6	7	8f	9a	9b	10	11	12	14	15	16	17	18	19	20	21	22	23	24
Year	88	80	81	85	81	85	*	85	87	75	87	80	60	85	80	89	87	80	88	80-84	88	80	81
Germany W.	2		1		1	4			1	3		5	1	4			4	4	1	2	2	4	1
Germany E.			5	5	2										3								2
Ghana			2			2	5	2			4								4	4			1
Greece	1		1	5	1	5	1	3			3	3	4	4			4	3	1	3	2		1
Grenada				5							5							2		2			
Guam																							
Guatamala				4			1				3	2					2	1		2	2	1	
Guinea											5												
Guyana		3		5				5			5												
Haiti			2		4		1	3			5						3			2			2
Hong Kong			1	1	1		1					2	4				3			2	2		1
Honduras		3		5			1	2	1		4	2	3				4	1		2	2		
Hungary			2	5	1			5			5	2	3		1			5	2	2			4
Iceland	5					3		3						2	2			3		3		4	
India			1		1	4	2	2			5	2	4					2	5	2	2	1	1
Indonesia			2	1	4	3	1	3			4	2	4				3	2	5	2	2		1
Iran						3	5						3					3		3			
Iraq			4	5	5																		2
Ireland	2		1	1	1	5		4	1	4		4	2			5		5	2	2	2	3	1
Israel		4	1		2	4	1	2				3	2					5	1	4	3		1
Italy	1	5	1	4	1			3	1	5	3	4	2	1	3	5		1		3	2	3	1
Ivory Coast				2			1				4							5					

Table 1. Basic Data Matrix

Category	1	2	3	5	6	7	8f	9a	9b	10	11	12	14	15	16	17	18	19	20	21	22	23	24
Year	88	80	81	85	81	85	*	85	87	75	87	80	60	85	80	89	87	80	88	80-84	88	80	81
Jamaica			1	1	1		2	3			4		3		5	2				3		3	1
Japan	1	5	1	2	1			2	2	3		4	2		1	2	5		1	1		2	1
Jordan				1				3			5							5	5	2			
Kenya			2	1	2		1	3	1		4	3	4			3	5	3		2	5	2	1
Korea (S)			2	2	2	3	2	2	3		4	3	4		1	1	5	2	2	2		2	1
Korea (N)			5		5																		4
Kuwait			2	4	1	5	1	5										3	1	2			2
Laos				5							5												
Lebanon				1							5												
Liberia			4		2	4	1	3			5						4		5	2		2	2
Libya			2	5	2		3																4
Luxembourg	2	5				4			1			4	4		5	4		4		2	4	3	
Madagascar											5	3	4							3			
Malawi							3	2			5	2	4				5	3		2			
Malaysia			2	3	1		1	3			4						3		2	2	2		1
Mali											5	3							2	2			
Malta	3			3		4		5			5				1		3	3		2			
Mauritania							2				5									2		3	
Mauritius				1		3		3	1		4		4			2	4		4	3			
Mexico			1	5	1		1	2	2		4		4		1	2	5	2	2	3	2		1
Mongolia				5																			
Morocco			4	1	2	4	1	3			4	3					4			2			1

Table 1. Basic Data Matrix

Category	1	2	3	5	6	7	8f	9a	9b	10	11	12	14	15	16	17	18	19	20	21	22	23	24
Year	88	80	81	85	81	85	*	85	87	75	87	80	60	85	80	89	87	80	88	80-84	88	80	81
Mozambique			4	5	4		5																1
Nepal				1		2	1				5								3	2			
Netherlands	1	3	1	5	1			5	1	3		5	3		2	4	5	5	1	2	1	3	1
New Zealand	2	2	1	1	1	5		4	1					1	5	3	4	4	2	2	2	5	1
Nicaragua		3		4			5				5									3	2		
Niger				3	1		1				3									2			
Nigeria			1				3		2		4	4				2	2						1
Norway	1	4	1		1	4		5		4		5	2	4	2			5	1	2	1	5	1
Oman			1				1	5			5							3	1			3	
Pakistan			2		2		1	2			4	2	4				2	3	5	2	2		1
Panama		3	1	4	1	4	1				5	2					4	3	1	2	2	2	1
Papau N.G.			1		1			3					4						3	2			1
Paraguay		3	2	3	1		2	1	1		4	3	4			3	3	1	2	2			1
Peru			1		2		1	2			4	2					4		4	4	5		1
Philippines			1	2	4	2	1	2			3	2	4		1		2			3	3	2	1
Poland			4	5	2							2	4		1				2	3			2
Portugal	3		1		1		1				4	3		4	1					3	3	2	1
Qatar			1																				
Romania			5	5	2						5							4		2			5
Rwanda			1				2				5									2			
Saudia Arabia			4	2	2		1									—				1	1		1
Senegal			1		1		1				4	3					5			2		1	1

Category	1	2	3	5	6	7	8f	9a	9b	10	11	12	14	15	16	17	18	19	20	21	22	23	24
Year	88	80	81	85	81	85	*	85	87	75	87	80	60	85	80	89	87	80	88	80-84	88	80	81
Seychelles				5							5				4			3		2			
Sierre Leone			1		2	1		2			5		5						4	3			1
Singapore			2	3	1	3	1	3	2							1	3	2	1	2	2	3	1
Somalia				5							5									3			
South Africa	1	3	5		5		1	2	3				2			4	2	2		2	2	1	2
Soviet Union			5	5	4								4										4
Spain	2		1	4	1	3				2		3	4	4	1			3	2	2	2	3	1
Sri Lanka			1		1	4	2	3			4	1	4					4	4	3		2	1
St Lucia																				2		3	
St. Vincent				1							5												
Sudan			2				2				4		4							3		1	
Suriname			3												1			4					
Swaziland											5							2		2		2	
Sweden	1	4	1		1	5		5	1	4			2	4	5	5	1	5	1	2	5	5	1
Switzerland	1	3	1	5	1	4		1	1				2	5		1	2	3	1	2	5	3	1
Syria			4	2	2						5				4					2			2
Taiwan			4		1																5		1
Tanzania			4		4		5				4	3	4				5			3		1	4
Thailand			1	3	2	3	1	2	3		3		4			1	5	2	4	2	2	2	1
Togo			3				1				5								4	2		1	
Trinidad			1		1						5							3					1
Tunisia			2		1			4				3	4					3	5	2			1

	Table 1. Basic Data Matrix																						
Category	1	2	3	5	6	7	8f	9a	9b	10	11	12	14	15	16	17	18	19	20	21	22	23	24
Year	88	80	81	85	81	85	*	85	87	75	87	80	60	85	80	89	87	80	88	80-84	88	80	81
Turkey	2		4	5	1		2	2	1		4		3				3		2	3	2		1
Uganda							5				5		5						1			1	
United Arab Em.						2															1		
United Kingdom	1	3		5		5		4	1	3		4	2	3	2	3	4	4	1	2	2	5	1
United States	1	2	1	4	1	5		3	1	3		4	2	2	2	2	2	3	1	2	1	4	1
Uruguay		2				3	1	3			4	3						2	5	3			
Vanuatu											5								2				
Venezuela		2	1	5	1	3	1	3			4	3	3		2		3	2	2	2	2		1
Vietnam			4	5	4																		5
Yemen Arab Rep.											5							4					
Yugoslavia	5		1	5	1	3	3				2	3						3	3	3			5
Zaire			4		4		1				5		5				5	2	4	3			2
Zambia			4	1	4		2		3		4	3				2	5		2	2		2	1
Zimbabwe			4		2	4	3				5	3						4	4	2		1	1

* Twenty-five year averages used to make rations

Concordance: Measures of "Homework" Measures of Economic Freedom

In this section we give the abbreviated code which appears in our "Summary Rating Table," the associated original description of the variable from Block's list, a) the associated proxy we have found for that variable, b) the source(s) of our proxy, c) the date(s) of the data, and d) the verbal or numerical basis for our ratings, where appropriate. When we have not provided an equivalent measure for a specific measure on the original list, it is either because that measure is approximately the same as one we have provided or because we have not been able to find anything approximating the requested measure.[3]

HMF 1 "Restrictions on International Trade"
   a) Per capita cost of Restrictions on International Trade
   b) Easton, Stephen (1989) *Rating Economic Freedom: International Trade and Financial Arrangements.* (Mimeo) LF-FI Conference. International Monetary Fund (1989) *International Financial Statistics.* Washington, D.C.
   c) 1989
   d) Ratings (based on the ratio of per capita cost of trade and capital restrictions to per capita GDP)

0	< rank 1	0.05
0.05	< rank 2	0.1
0.10	< rank 3	0.15
0.15	< rank 4	0.20
0.20	< rank 5	

HMF 2 "Restrictions on Immigration"
   a) Permanent Immigration Requirements
   b) United Nations (1982) *International Migration Policies and Programmes: A World Survey.* Dept. of International Economic and Social Affairs. Population Studies, No. 80.
   c) 1980

d) Rating:

   1 = No restrictions
   2 = Quota or weighted system
   3 = Skilled labor or professionals only
   4 = Entry restricted to a given ethnic or religious group only
   5 = No permanent immigration

HMF 3 *"Restrictions on Emigration"*
   a) Freedom of immigration
   b) Humana, C. (1986) *World Human Rights (The Economist)*. London: Hobber & Stroughton.
   c) Early 80's
   d) Rating (derived from Humana's four point rating)
      1 = Respect for this freedom
      2 = Some violation or infringement
      4 = Substantial oppression, violation or restriction
      5 = Continuous violation or total denial

HMF 4 *"Government Spending /GNP by Selected Categories"*
   a) Major Categories of Government Spending/GNP ratios
   b) International Monetary Fund (1987) *Government Finance Statistic Yearbook*: Washington, D.C.
   c) 1980
   d) Aggregation of categories of Government spending produces the Government spending /GNP ratio, see HMF 19 for rating.

HMF 5 *"Education - Whatever the State Monopolizes"*
   a) Education - What the state does not monopolize
   b) UNESCO (1987) *UNESCO Statistical Yearbook*. London.
   c) 1985
   d) Rating (based on percentages not monopolized)

100%	≥ rating 1	≥ 80%
80%	≥ rating 2	≥ 60%
60%	≥ rating 3	≥ 40%
40%	≥ rating 4	≥ 20%
20%	≥ rating 5	≥ 0%

HMF 6 Freedom of Travel, Freedom to Relocate One's Domicile, Absence of Internal Passports"
   a) Freedom of internal migration
   b) Humana, C. (1986) *World Human Rights (The Economist).* London: Hobber & Stroughton.
   c) Early 80's
   d) Rating (derived from Humana's four point rating)

1	=	Respect for this freedom
2	=	Some violation or infringement
4	=	Substantial oppression, violation or restriction
5	=	Continuous violation or total denial

HMF 7 "Total Government Spending/(Net National Product + Transfer Payments)"
   a) As above
   b) United Nations (1986) *National Account Statistics: Main Aggregates and Detailed Tables Part I & II,* New York. International Monetary Fund (1985) *Government Finance Statistics Yearbook,* Washington, D.C.
   c) 1985
   d) Rating (based on numerical value of HMF 7 ratios)

   $$0.0 \leq 1 < 0.1$$
   $$0.1 \leq 2 < 0.2$$
   $$0.2 \leq 3 < 0.3$$
   $$0.3 \leq 4 < 0.4$$
   $$0.4 \leq 5$$

HMF 8f "Official Price Level/Blackmarket Price Level"
   a) Real Average Official Exchange rate/Real Average Blackmarket Exchange rate
   b) Wood, A. (1988) *Global Trends in Real Exchange Rates 1960 to 1984.* World Bank Discussion Paper No. 35
   c) 1960 to 1984

d) Ratings (based on HMF 8f ratios)

0.00	≤	1	<0.25
0.25	≤	2	<0.50
0.50	≤	3	<0.75
0.75	≤	4	<1.00
1.00	≤	5	

HMF 9a "Aggregate Tax Rate"

a) As above

b) International Monetary Fund (1989) *International Financial Statistics Yearbook*. Washington, D.C. Price Waterhouse (1988) *Individual Taxes: A Worldwide Summary*. London.

c) 1985

d) Rating (based on HMF 9a rates)

0.0 ≤	1	<0.1
0.1 ≤	2	<0.2
0.2 ≤	3	<0.3
0.3 ≤	4	<0.4
0.4 ≤	5	

HMF 9b "Ratio of the Top Marginal Income Tax Rate to the Average Income Tax Rate"

a) As above

b) International Monetary Fund (1989) *International Financial Statistics Yearbook*. Washington, D.C. Price Waterhouse (1988) *Individual Taxes: A Worldwide Summary*. London.

c) 1987

d) Rating (based on HMF 9b ratios)

0 ≤	1	< 3
3 ≤	2	< 6
6 ≤	3	< 9
9 ≤	4	<12
12 ≤	5	

HMF 10 "Reaction Index = (Government Deficit + the Underground Economy)/GNP"
   a) As above
   b) Frey, B.S. & Weck-Hannemann, H. (1985) "The Hidden Economy as an 'Unobserved' Variable." *European Economic Review.*
   c) 1975
   d) Rating (based on numerical value of HMF 10)

0	≤	1	<0.05
0.05	≤	2	<0.10
0.10	≤	3	<0.15
0.15	≤	4	<0.20
0.20	≤	5	

HMF 11 "Ratio of Total Government Debt to Total Debt Outstanding"
   a) External Government Debt/External Total Debt (Data on internal debt is not available except for a few countries)
   b) World Bank. (1988) *World Debt Tables - External Debt of Less Developed Countries.* Washington, D.C.
   c) 1980
   d) Ratings (based on numerical value of HMF 11 ratio)

0.00		1	<0.25
0.26	≤	2	<0.50
0.51	≤	3	<0.75
0.76	≤	4	<1.00
1.0	≤	5	

HMF 12 "Ratio of the Exchange Adjusted Price of a Standard Basket of Commodities in the Domestic Economy to the World Price of Those Same Commodities"
   a) Real Exchange Rate
   b) United Nations. (1986) *World Comparison of Purchasing Power and Real Product for 1980.* New York. United Nations. (1987) *World Comparisons of Purchasing Power and Real Product for 1980.* New York.
   c) 1980

d) Rating (based on numerical value of HMF 12 ratio)

0.0 ≤	1		<0.1
0.1 ≤	2		<0.2
0.2 ≤	3		<0.3
0.3 ≤	4		<0.4
0.4 ≤	5		

HMF 13 "Price Relative as a Measure of Regulatory Restriction"
No appropriate proxy found

HMF 14 "Fraction of Total Income Devoted to Various Expenditures by the Median Household"
   a) Non-Discretionary Expeniture/Income
   b) United Nations (1980) *Compendium of Social Statistics - 1977*. New York.
   c) 60's.
   d) Rating (based on HMF 14 percentages)

40%	≤	1	<50%
50%	≤	2	<60%
60%	≤	3	<70%
70%	≤	4	<80%
80%	≤	5	

HMF 15 "Fraction of Total Agricultural Output Marketed by Government Agencies"
   a) 15-1 Average Level of Agricultural Protection; 15-2 Social Cost of Price Distortions
   b) Gulbrandsen, O. & Lindbeck, A. (1973) The Economics of the Agricultural Sector. Almquist & Wicksell: Stockholm. Peterson, W.L. (1979) "International Farm Prices and the Social Cost of Cheap Food Policy. American Journal of Agricultural Economics. 61: 12-21.
   c) Mid 60's and 1969.
   d) Rankings (based on HMF 15 Percentages)

0%	≤	1	
1%	≤	2	<25%
26%	≤	3	<50%
51%	≤	4	<75%
76%	≤	5	<100%

HMF 16 "Emigration Rate as a Ratio to the Birth Rate"
  a) Emigration Rate/Birth Rate ratio
  b) United Nation (1985) *Demographic Yearbook*. New York.
  c) 1980
  d) Rating (based on HMF 16 ratios)

0.00	≤	1	<0.25
0.25	≤	2	<0.50
0.50	≤	3	<0.75
0.75	≤	4	<1.00
1.00	≤	5	

HMF 17 "Marginal Tax Rate of a Person with an Income Twice the Mean"
  a) As above
  b) International Monetary Fund (1990) *International Financial Statistics Yearbook*. Washington, D.C. Price Waterhouse (1988) *Individual Taxes: A Worldwide Summary*. London.
  c) 1989
  d) Rating (based on HMF 17 rates)

0.0 ≤	1	<0.1
0.1 ≤	2	<0.2
0.2 ≤	3	<0.3
0.3 ≤	4	<0.4
0.4 ≤	5	

HMF 18 "Highest Marginal Tax Rate Minus the Base Marginal Tax Rate"
  a) As above
  b) International Monetary Fund (1989) *International Financial Statistics Yearbook*. Washington, D.C. Price Waterhouse (1988) *Individual Taxes: A Worldwide Summary*. London.
  c) 1989
  d) Rating (based on HMF 18 net rates)

0.0 ≤	1	<0.1
0.1 ≤	2	<0.2
0.2 ≤	3	<0.3
0.3 ≤	4	<0.4
0.4 ≤	5	

HMF 19 "Government Expenditures as a Share of GDP"
   a) Government Expenditure/GDP ratio
   b) International Monetary Fund (1987) *Government Finance Statistics Yearbook* : Washington, D.C.
   c) 1980 (or closest year as noted)
   d) Rating (based on the numerical value of HMF 19 ratios)

$$0.10 \leq 1 < 0.20$$
$$0.20 \leq 2 < 0.30$$
$$0.30 \leq 3 < 0.40$$
$$0.40 \leq 4 < 0.50$$
$$0.50 \leq 5$$

HMF 20 "Tariff Revenue Divided by Total Value of Trade"
   a) Tariff Revenue/Total Trade
   b) International Monetary Fund (1988) *International Government Statistics Yearbook.* Washington D.C.
   c) 1988
   d) Ratings (based on numerical value of HMF 20)

$$0.00 \leq 1 < 0.05$$
$$0.05 \leq 2 < 0.10$$
$$0.10 \leq 3 < 0.15$$
$$0.15 \leq 4 < 0.20$$
$$0.20 \leq 5$$

HMF 21 "Inflation Rate during Last Five Years"
   a) Five-year Average Inflation Rate
   b) International Monetary Fund. (1987) *Financial Statistic Yearbook - 1987.* Washington, D.C.
   c) 1980
   d) Rating (based on HMF 21 percentages)

$$0\% \leq 1 < 4\%$$
$$4\% \leq 2 < 16\%$$
$$16\% \leq 3 < 64\%$$
$$64\% \leq 4 < 256\%$$
$$256\% \leq 5$$

HMF 22 "Share of Aggregate Output Subject to Price Controls"

    a) As above

    b) Business International Corporation. (1990) *Investing, Licensing & Trading Conditions Abroad*. New York.U.S. Dept. of Commerce (1990) *Marketing Pamphlets*.

    c) 1989

    d) Rating (detailed definition given by source)

1	=	No price controls
2	=	Price controls - limited market coverage
3	=	Moderate market coverage - government regulates monopolies and essential prices
4	=	Moderate plus - government also monitors all prices
5	=	Extensive market coverage - all prices controlled

HMF 23 "Government Employment as a Share of Total Employment"

    a) Government Employees per capita

    b) Heller, P.S. & Tait, A.A. (1983) *Government Employment and Pay: Some International Comparisons*. International Monetary Fund, Occasional Paper 24.

    c) 1980 (or closest as noted)

    d) Rating (based on HMF 23 percentages)

$$0.00 \leq 1 < 2.00$$
$$2.00 \leq 2 < 4.00$$
$$4.00 \leq 3 < 6.00$$
$$6.00 \leq 4 < 8.00$$
$$8.00 \leq 5$$

HMF 24 "Property Rights"

    a) Freedom of property

    b) Humana, C. (1986) *World Human Rights (The Economist)*. London: Hobber & Stroughton.

    c) Early 80's

    d) Rating (derived from Humana's four point rating)

1	=	Respect for this freedom
2	=	Some violation or infringement
4	=	Substantial oppression, violation or restriction
5	=	Continuous violation or total denial

Descriptive Statistics Tables

For the purpose of interpreting the following tables, remember that r is significant at 0.05 for all r ≥ 0.30 for n ≥ 30.

Section A

II. Government Size

Rank correlations between all rankable Government Size categories.
n=48

HMF7	1		
HMF19	0.74	1	
HMF23	0.45	0.58	1
	HMF7	HMF19	HMF23

This table suggests that alternative measures of government size are redundant.

III. Tax Measures

Rank Correlation between all rankable Tax Measure categories.
n=48

HMF9a	1			
HMF9b	0.06	1		
HMF17	0.67	-0.22	1	
HMF18	0.45	0.47	0.14	1
	HMF9a	HMF9b	HMF17	HMF23

This table suggests that HMF 9a may redundant since HMF 17 & 18 are good substitutes for it but not for each other or for HMF 9b.

IV Government Regulations

Rank Correlation between all rankable Government Regulation categories.
   n=68

HMF5	1	
HMF22	-0.14	1
	HMF5	HMF23

This table does not reveal any redundancies for measures in this category.

V. Indirect Measures of Economic Freedom

Rank Correlations between all rankable Indirect Measures categories.
   n=32

HMF10	1			
HMF12	-0.23	1		
HMF16	0.04	-0.26	1	
HMF21	0.24	-0.24	0.40	1
	HMF10	HMF12	HMF16	HMF21

No important redundancies are revealed here.

VI. Civil Rights Measures

Correlations of ordinal ratings between Civil Rights Measures and Lindsay Wrights categories **Civil Freedom** (CIV) and **Political Freedom** (POL).
   n=83

HMF3	1				
HMF6	0.63	1			
HMF24	0.57	0.40	1		
CIV	0.74	0.63	0.64	1	
POL	0.77	0.64	0.56	0.93	1
	HMF3	HMF6	HMF24	CIV	POL

Apparently, not much is gained by using these HMF measures as substitutes for Wright's measures. Further, these HMF measures appear to be good substitutes for each other.

Section B

Rank correlations between all rankable categories and Scully's (REF III Symposium, 1989) overall index.

HMF	1	7	9a	9b	10	12	16	17	18
corr	-0.25	-0.59	-0.26	0.41	-0.57	-0.25	-0.26	0.23	-0.30
n	26	90	68	29	16	59	29	30	56

HMF	19	20	21	23
corr	-0.30	0.58	0.23	-0.8
n	70	64	99	57

This table suggests that only a few of the HMF measures are substitutes for Scully's measure. Others may be compliments.

Section C

Rank correlations between all rankable categories.

	1	7	9	9	10	12	16	17	18	19	21	23
1	1	-0.23	0.37	-0.07	0.14	0.42	0.2	-0.24	-0.07	0.18	-0.32	0.37
7		1	0.62	-0.66	0.85	0.53	0.35	0.74	-0.37	0.72	-0.15	0.56
9			1	0.03	0.19	0.53	0.36	0.48	0.08	0.64	-0.32	0.52
9				1	0.06	0	-0.87	-0.51	0.4	-0.14	-0.02	-0.49
10					1	-0.15	0.09	0.49	0.08	0.62	0.59	0.14
12						1	0.65	0.39	0.17	0.55	-0.5	0.74
16							1	0.67	-0.31	0.24	0.35	0.44
17								1	-0.17	0.65	0.07	0.21
18									1	0.01	0.13	-0.3
19										1	-0.24	0.54
21											1	-0.39
23												1

This table shows that almost all of the HMF measures are substitutes for a number of other HMF measures with the possible exception of HMF 1.

Notes

[1] We acknowledge the assistance of L. Still in the preparation of a section of our original paper and financial support from Challenge 90.

[2] Rating Economic Freedom II Symposium, 1988, published as Walter Block, ed., *Economic Freedom: Toward a Theory of Measurement*, Vancouver: The Fraser Institute, 1991.

[3] This is especially true of item 8 of which a number of subparts are duplicated elsewhere or are impossible to find. Indeed, we have given a detailed description of only one measure—8f—in the body of the paper. A second measure—8b (or 8-2)—we have proxied by the Draft Freedom Rating originally developed by Spindler and Still (1988) and printed out that measure in the SUMMARY RATING TABLE.

Discussion

Looking at HMF19, government spending relative to income, Milton Friedman argued that it indicates that India is the freest country among eleven which he used in discussing the Gwartney et al. paper. Since we would all agree that India is not the freest economically, why did this occur? If a country has 90% of its population in agriculture, then it is impossible for the government to spend any large fraction of their income. Somehow, he argued, we must modify this ratio to account for the level of income or the fraction of the population in agriculture, to have a useful measure. This points to the limitation of a technique that ranks 169 countries about which we know relatively little and the need to use the same measures for each.

James Ahiakpor suggested that the agricultural/urban mix should be considered in any ranking. He wondered if use of government employment and government expenditures is not double counting. Alan Stockman wondered about any suggested adjustment for agriculture or any other adjustment for the government's inability to interfere with economic freedom. Why do we want to adjust. For example, suppose personal computers make it more difficult for the government to infringe on economic freedom. He did not think we would want to "adjust" for computers. There is in fact an increase in economic freedom. If taxes are

hard to collect, then it interferes less. Milton Friedman responded that the ratio of government expenditure to income may not be a good measure in these circumstances. Instead, the government interferes with freedom of movement, fixing prices and the like.

Arthur Denzau pointed out that property rights are difficult to measure. He gave the example of South Africa in which the legal system works very smoothly and well, but where blacks are unable to participate in certain lines of business in any way. Gwartney mentioned that although India looks relatively free according to the G/Y measure, it is less free along the other dimensions: number of government enterprises in many sectors, or price controls. These are part of the regulation dimension. Other countries like Guatamala and Honduras rank surprisingly high, and he argued, that it is because of the absence of the regulatory dimension. Mike Walker noted that Canada has 407 quasi-governmental companies. Juan Bendfeldt argued that the underground economy and emigration are both symptoms of diminished economic freedom.

Richard Stroup argued that if entry is not prohibited, then even if the government runs the trains, it matters little in terms of economic freedom. Apart from subsidies, counting government employees is over emphasizing the problems. James Gwartney replied that government almost always uses taxes, restricts entry, or restricts competitors. He gave examples in the U.S. of the post office and public schools. Walter Block argued that the very act of taxation which underwrites government enterprises reduces freedom. Edward Hudgins emphasized that the enforcement of laws on the books is often problematic and that the measurement of the informal sector may give some guide to how constraining it is. Stephen Easton remarked that a problem with public companies is that they create an expectation of further interference. He gave as an example public bus companies that typically need to enlarge their routes as they are continually losing money on those that they have. In the process they continually reduce the activity of private companies. Arthur Denzau pointed out that expectations are always difficult to measure. Rick Stroup argued that this is the same problem that we always face with prices and the like. The government budget captures all these effects. You need a handle on government regulation. Government enterprise is not a problem except as it is a function of regulation or restriction on entry.

Alan Stockman suggested that G/Y might not be a good measure of restrictions on economic freedom. G alone is a better measure. If you have $100 worth of government spending and income that is $200 or income that is $300, then the economic freedom that is lost is still $100. Why should we adjust by wealth or income instead of measuring the number of goods the government is taking away. Ron Jones stressed that both absolute and relative measures were useful in different contexts. Easton mentioned that by using the dollar approach as was done in his papers, evaluating economic growth may be more difficult as government expenditure policies may gather increased revenue simply because of the expansion of economic activity. This leads to the conclusion that governments of expanding economies have expanded their role, while governments of contracting countries appear to improve in comparison. Similarly, cross country comparisons are difficult.

James Ahiakpor suggested that some trade taxes are for the purpose of raising revenue and are not serious impingements on international trade. Milton Friedman argued that tariff revenue has no relationship to economic freedom whatsoever. He indicated that prior to 1860 Japan had no tariff revenue, nor any trade. Further, emphasizing Ahiakpor's point, he stressed that a level of tariff equal to a general tax domestically does not interfere with trade at all. What interferes with trade is the difference between the level of tariff and domestic tax. A large country will have less trade, all else equal than a small country, so tariff revenue is simply misleading. Some acknowledgment of country size must temper the trade tax kinds of claims about economic freedom. When Easton did this, Friedman recalled, he used the full expenditure levels on the goods rather than simply the amount of the tariff.

Arthur Denzau wondered what was actually used for exchange rates in some of the countries, and further how data on black markets had been collected. Gwartney wondered about what tax rates were being counted and Spindler responded that senior government rates were collected. John Goodman said that Swedish central government tax rates were about 40%, but rates rose to 70% when other levels of government taxes were included.

Milton Friedman argued that government spending rather than the various tax rates as a measure of government activity should be used. Ratios of top tax rates to bottom rates would seem to be a very insensitive measure of what one wishes to measure. Ratio of government debt to total debt

would seem to be totally inappropriate for anything in which we are interested.

In the general discussion that ensued, total government expenditures (GNP account based) were distinguished from total government spending or total government purchases which include transfers or other kinds of spending not counted in the national income accounts. The use of marginal versus total taxes was discussed with the burden of the marginal being contrasted with the effect of the redistribution of the average. Ron Jones referred to Figure 4 in the Jones and Stockman paper to argue that the loss in economic freedom will always outweigh the level of tax revenue and that loss will increase as tax rates rise even though revenues rise and then fall. Alan Stockman argued that the wedge of the tax is the marginal tax and is relevant for the consumer surplus losses calculated in both Easton, and the Jones and Stockman paper. If the tax rate is increasing, then the average tells you what the government takes. Therefore both are needed. Milton Friedman claimed that he had no difficulty in recognizing that both the average and the marginal are important components of economic freedom but that the ratio of the top marginal tax to the average tax can be foolish since the ratio will be the same if the marginal rate is 20% and the average 10% as it would be if the top marginal rate is 90% and the average is 45%. Richard Stroup stressed that there is a problem with the high marginal rates as they may apply to a very small group of people, and he wondered how one can deal with this. James Gwartney responded that they tried to use some income based measure ranking a country lower if the high rate kicked-in earlier in the tax system. Stroup responded by suggesting that the different tax rates might have to be weighted by the number of people affected.

Measuring Economic Liberty

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Introduction

M EASURING THE AMOUNT OF LIBERTY available to citizens of countries throughout the world has been in the domain of political scientists for about 30 years. Early efforts at measuring political and civil liberty were made by Banks and Textor (1963), Dahl (1971) and Claude (1976). These early studies suffered from limitations on source material, the comprehensiveness of political and civil rights measures, and the comprehensiveness of attributes that make up the indexes.

Gastil (1987) has constructed indexes annually since 1973 of political and civil rights for virtually all nations. His political rights measure ranked from 1 (the highest degree of liberty) to 7 (the lowest) is based on rankings of criteria such as the meaningfulness of elections for the executive and legislature as an expression of the will of the polity, election laws and campaigning opportunities, voting power of the electorate (electoral vote weighting), multiple political parties, evidence of political power shifting through elections, significant opposition voting, freedom from external and military control of domestic politics, minority self-determination or pluralism, decentralization of political power, and the attempt of political agents to reach a consensus on major national issues [Gastil (1987, p.9)]. Gastil's measure of civil liberty, ranked on a similar scale, is based on rankings of criteria such as freedom of the press from political censorship, freedom of speech, freedom of assembly and peaceful demonstration, freedom to organize for political purposes, equal protection under the law, freedom from search and seizure of property, an independent judiciary, freedom from arbitrary imprisonment, freedom from State terror and abuse, free trade unions and worker associations, free business and professional associations, freedom of religion, protected social rights (including freedom of property, internal and external travel, choice of residence, marriage and family), socioeconomic rights (including freedom from dependency on landlords, bosses, union leaders, or bureaucrats), freedom from gross socioeconomic inequality, and freedom from gross government indifference or corruption [Gastil (1987, p.10)].

Humana (1984, 1986) has developed a human rights rating for nations based on conformity to the United Nations Universal Declaration of Human Rights, the International Covenant on Economic, Social and Cultural Rights, and the International Covenant on Civil and Political Rights. These 40 separate attributes of human rights include many of those considered by Gastil, but include also freedom from compulsory work permits or conscription of labor, freedom from capital punishment and corporal punishment, freedom from mail censorship or telephone-tapping, political, legal, social and economic equality for women and ethnic minorities, the right to free legal counsel, and freedom of personal rights (inter-racial marriage, equality of the sexes, use of contraception, homosexuality).

While the Gastil measures of civil and political liberty have gained widespread acceptance among scholars, they are subject to criticism, be-

cause they do not distinguish between natural or negative rights and positive or human rights. Negative rights are those that a freely constituted society reserve for themselves exclusively, denying the State any, or severely restraining rights to interfere. These are the individual rights articulated in the Virginia Bill of Rights, the original Constitution of the United States, and the Bill of Rights Amendments to the U.S. Constitution. Positive or human rights (e.g., the right to a job at a reasonable level of reward, the right to pursue a given life style without any interference or discrimination, the right to decent housing, the right to a clean environment in which to work, live, and pursue leisure activities, etc.) are those rights granted by the State to all or some individuals at the expense of other individuals. Fundamentally, positive rights interfere with and diminish negative rights. The State cannot set working hours, minimum wages, employment benefits, working conditions and regulate product markets (fair price competition, consumer product safety, licensing, etc.) without diminishing the right to freedom of contract. The State cannot define land use and license business activity without diminishing the economic right of due process. Positive rights essentially are transformations of rights to stream of income and utility. For the State to act as an agent that brokers the distribution of these positive or human rights, it must as a natural consequence interfere with negative rights. The justification for the circumspection of negative rights is that sovereignty rests with the political majority. Political scientists adhere religiously to the notion of majoritarianism as a principal of sovereignty. As a consequence individual rights are subject to the political market place in which vote maximizing politicians aggregate coalitions (special interests) to get elected and remain in office. Liberty as understood by classical liberals loses its meaning under a regime of sovereignty by majority rule.

Gastil (1982) in collaboration with Lindsay Wright, developed measures of economic liberty. Skepticism has been expressed about these measures (Walker, 1988). The aggregate measure of economic liberty is an aggregation of four sub-indices of economic freedom: (1) the right to private property (but, including attributes such as land reform and social services); (2) the right to freedom of association (including, the rights to form trade unions and to form business associations or cartels); (3) the right to freedom of internal and external travel (but, including such attributes as discrimination and socioeconomic mobility); and (4) the right to informa-

tion (price controls, subsidies, minimum wage, media ownership). Freedom of association, so measured, is freedom to collude to redistribute income, which is hardly the notion that a classical liberal has of a negative or constitutional right. Although freedom of the media is an important attribute of economic (as well as civil and political) liberty (competition of ideas and policies in an open forum), freedom of information ought to be the right of economic actors to confront free market prices (see Rabushka, (1989)) for further criticism of the Gastil-Wright economic liberty measures).

Rabushka (1989) has argued that a quantitative measure of economic liberty needs to be much more comprehensive in scope and more precise in definition of the attributes that aggregate to an overall measure than are found in the Gastil-Wright measures. He would include the right to private property, including freedom of contract, the rule of law (equal protection under the law, an independent judiciary, etc.), the size of the State or the State's command of resources through taxation and non-tax revenue, public spending, economic regulation of business and labor, the monetary framework and monetary policy, and commercial policy (free versus restricted trade). In addition to the definition and scope of the attributes of economic freedom, there is the problem of weighting the attributes to construct an overall measure of economic liberty. Past measures of economic liberty have either adopted the egalitarian standard of equal weighting (a social welfare function that treats each right as of equal utility or preference) of the attributes or the researcher imposes his own standard of relative importance of the attributes (see Spindler and Still (1989) for a discussion of the weighting of the four sub-indices of economic freedom in the Gastil-Wright ratings).

The purpose of this paper is to construct some aggregate indexes of economic liberty and to demonstrate how relative rankings of liberty across countries will vary, contingent on how relative information about liberty, from individual liberty indicators, is aggregated and weighted. This paper is essentially a sensitivity analysis demonstrating how world rankings of liberty vary as we alter the way we summarize the information from several liberty indicators into one summary index.

Attributes of Economic Liberty

The objective of this paper is to measure economic liberty as comprehensively as possible with available data for as many countries as possible. A total of fifteen attributes of economic liberty were selected.[1] L1 is the Foreign Exchange Regime (available from Pick's Currency Yearbook, which has been renamed as World Currency Yearbook). The foreign currency regime is coded 1 = Free, 2 = Liberal, 3 = Strict, and 4 = Dictatorial and characterizes the degree of State control of international financial transfers and the relationship between official exchange rates and market shadow exchange rates. Since exchange rate and foreign currency restrictions are coincidental policies of trade restrictions, the measure captures the degree of openness (price competitiveness) of the economy and the right of economic actors to confront world prices. Free trade induces allocative efficiency in the economy and permits the exploitation of gains from comparative advantage. We experimented with a trade openness measure: exports plus imports divided by GDP. However, there are problems with such a measure (e.g., the European customs union arrangement yields a high degree of trade among the partners, but a modest level of trade with the world, some countries have very large domestic markets and can rationally home produce (e.g., the USA, etc.)). Moreover, the data was not complete for the large sample of economies in this study.

Attribute L2 is Military Draft Freedom, coded 1 to 5 (see Spindler and Still, 1989). Conscription is a tax and the probalistic taking of life and liberty. Attributes L3, L4, and L5 are Lindsay Wright's measures of freedom of property, freedom of movement and freedom of information. Attribute L6 is Gastil's Civil Rights index, a measure of the rule of law, coded 1 to 7. Attribute L7 is the Gastil-Wright classification of type of economic system, which ranges from capitalist inclusive = 1 to socialist non-exclusive = 9 and is a measure of the degree of individual versus State control of property and reliance on the market for the allocation of resources. Attributes L8 and L9 are the freedom of the print and broadcast media, respectively, coded 1 to 3, and represent the degree of competition in the market place for ideas (source: Gastil). Attributes L10 to L15 from Humana (1986), are coded 1 to 4, and are respectively, freedom to travel domestically, freedom to travel abroad, the right to peaceful assembly, permit not required for work, freedom from public search without a warrant, and freedom from the

arbitrary seizure of property. For all of the attributes 1 is free and the highest value represents the least amount of freedom. In the next section we define the various economic liberty indexes analyzed in the paper.

Weighting the Attributes of Economic Liberty Indexes

In the construction of indexes of liberty, the current practice is to weight each attribute equally. By this egalitarian standard freedom of property, freedom to form trade unions and other collusive associations, due process of law, the military draft, capital punishment, and so on, are rights of equal preference in a citizen's utility function. Rights are logically separable and may or may not be lexicographically ranked by individuals. If it was possible to rank rights lexicographically in a social welfare function, weights based on the relative rankings of the attributes of liberty could be employed to construct an overall measure of liberty. Of course, this approach is not possible. An alternative is for the researcher to impose his own ranking on the relative importance of rights, but this is ad hoc. There are two objective methods of weighting the attributes of liberty in constructing an overall index of liberty. One method is to weight the attributes by the variances in the attributes. This is the method of principal components analysis. This technique has the feature that the normality assumptions in statistical theory are invoked. A second method is to use an instrumental variable or hedonic approach and weight by the regression coefficients. This technique has the feature that the regression coefficient of the liberty attribute on the instrumental variance (say, per capita income) measures the implicit value assigned to the attribute. These are the techniques employed here in the construction of overall indexes of economic liberty.

In the last section the individual economic freedom measures that others have used to examine economic liberty were described. In this section we present a multidimensional representation of economic liberty by combining the information from several different individual measures into a class of aggregate liberty indexes. As with the construction of any aggregate index, the critical step in combining various attributes into a single summary measure is the choice of appropriate weights. Since the index is a representation of a multidimensional view of a given country's

level of economic liberty, we utilize several indexes that all represent different undimensional capsulizations. There are many ways to aggregate information into one broad index. One strategy we adopted was suggested by the social choice and income inequality literature. This body of research can be extended to our work by examining the relative ranking of economic liberty between countries. Absolute notions of liberty become meaningless when the absolute metric is based upon an index derived from a vector of characteristics that all purport to measure a different aspect of the same problem. Maasoumi and Nickelsburg (1988), Scully and Slottje (1991), Slottje et al. (1991), and Slottje (1991) have used principal component analysis to compare the quality of life between countries. This is a statistical technique which relies solely on the variation and covariation of the data matrix to construct the weights in the indexes. Griliches (1971) has suggested that if there is one attribute which we desire to analyze, but can't observe directly, like the level of economic liberty in a country, we can use a hedonic model to see how other factors affect this variable. This generally implies that we use some variable as an instrument for the latent variable and then see how other characteristics affect this instrumental variable. Frank (1985) is the leader of a new school of economists that argue that it is the relative levels that matter in the utility economic agents derive from consuming goods. We extend this argument to economic liberty by suggesting that it is relative rankings between countries given a set of liberty indicators, that have the richest information content in comparing liberty between countries.

In our study we use all of these approaches in constructing our economic liberty measures and in comparing the level of economic freedom between countries. We construct several different measures where the weights are alternatively determined by ranks of attributes, principal components of the attributes and a hedonic representation of the attributes. We then present the relative rankings for each index to serve as a sensitivity analysis of the different weighting specifications. Finally, we take the average rank for each country over all the different indexes as the final index of economic freedom.[2] These ranks can be used directly as indexes. In Table 1 (column 1), we take the average rank across all 15 attributes for each country. We then rank these averages. This is our first liberty index and we call it RINDEX1 (Rank Index 1). We can also use information about the ranks as the weighting factors as we discuss below.[3]

Table 1. Average Rankings Based Upon Index Weights Constructed By:

Country	Mean Rank of 15 Liberty Indicators	Mean Rank of Principal Component Techniques	Mean Rank of Hedonic Models	Overall Index
Afghanistan	105.3	123.5	105.8	116
Albania	112.5	140.5	135.4	142
Algeria	76.6	118.5	110.4	114
Angola	112	139.5	136.4	143
Argentina	37.7	52	36.4	42
Australia	5.3	19	15.2	14
Austria	12.9	9.5	12.6	12
Bahamas	7	13	16.2	13
Bahrain	55.3	15.5	28.4	39
Bangladesh	57	85	92.6	86
Barbados	11.5	14	10.8	10
Belgium	7.8	7.5	3.2	5
Belize	10.5	42	35.8	32
Benin	79.1	101	105.6	110
Bolivia	42.9	38	20	24
Botswana	17.333	53.5	54.8	52
Brazil	29.9	45.5	35.8	37
Bulgaria	112.5	140.5	135.4	140
Burkina Faso	63.4	92.5	99.8	98
Burma	94.6	126	126.4	130
Burundi	60.3	101.5	102.2	100
Cameroon	68	91	124.8	115
Canada	3.5	6	7.2	6
Cape Verde	62.9	95	121.8	112
Central Africa	61.6	67	81	77
Chad	74.9	97	128.6	124
Chile	59.55	69	64.2	67
China	94.2	108.5	89	99
Colombia	35.5	47	71	62
Congo	71.1	90.5	103.8	101

Table 1. Average Rankings Based Upon Index Weights
Constructed By:

Country	Mean Rank of 15 Liberty Indicators	Mean Rank of Principal Component Techniques	Mean Rank of Hedonic Models	Overall Index
Costa Rica	4.6	19	20.6	15
Cuba	99.7	133	81.6	102
Cyprus	31.6	57.5	78.4	70
Czechoslovakia	105.66	136	105.2	120
Denmark	16.5	29.5	24.2	19
Dominica	5.9	23	31.2	20
Dominican Republic	17.1	35.5	39.6	34
Ecuador	33.6	49	25.6	31
Egypt	57.5	79.5	55.8	64
El Salvador	57.1	94.5	77	81
Ethiopia	106.3	131	123	131
Fiji	12.2	24	30	21
Finland	12.5	31	31.8	25
France	26	44	23.4	26
Gabon	33.4	51.5	78.2	68
Gambia	27.7	39	53.2	50
German Dem.Rep.	2.3	6	17.2	11
Germany Fed.	102.8	133	107.6	123
Great Britain	14.3	45	38.4	35
Greece	22.3	43	25.2	28
Grenada	66.8	88.5	70.8	78
Guatemala	40.4	38	78.8	65
Guinea	84.5	126.5	112.2	122
Guyana	72.1	107	128.4	126
Haiti	63.9	78	104.8	96
Hong Kong	11.9	13.5	3.6	8
Honduras	29.5	40	66.4	59
Hungary	84	121.5	73.4	92
Iceland	5.7	31.5	36.4	30
India	37.7	74	65.8	66

Table 1. Average Rankings Based Upon Index Weights Constructed By:

Country	Mean Rank of 15 Liberty Indicators	Mean Rank of Principal Component Techniques	Mean Rank of Hedonic Models	Overall Index
Indonesia	62.2	74	107.8	97
Iran	83.1	113	93.4	104
Iraq	102.1	128.5	123.2	129
Ireland	1	1	7	1
Israel	35.4	52.5	34.2	40
Italy	19.5	54	41.4	44
Ivory Coast	43.3	54	81.6	73
Jamaica	24.9	63.5	60.4	61
Japan	4.6	19	20.6	16
Jordan	56.2	65.5	49.2	57
Kenya	40.5	72.5	94.2	83
Korea	46.7	80	99	89
North Korea	112.7	141.5	131.8	139
Kuwait	50.2	42	10	18
Laos	97.1	131.5	135.8	138
Lebanon	33.1	35	61.2	55
Liberia	57.3	52	83.2	76
Libya	81.9	115	117.2	121
Liechtenstein	1	1	7	3
Luxembourg	1	1	7	2
Madagascar	73.9	112.5	119.6	118
Malawi	66	103	106.4	108
Malaysia	37.6	55	51.2	54
Mali	67.7	85	113.2	107
Mauritania	73.1	109	137.4	132
Mauritius	8.4	26.5	30.6	22
Mexico	32.4	35	50	48
Mongolia	112.5	104.5	135.4	141
Morroco	59.7	86	78	79
Mozambique	89.5	126.5	136.2	136

Country	Mean Rank of 15 Liberty Indicators	Mean Rank of Principal Component Techniques	Mean Rank of Hedonic Models	Overall Index
Nepal	48.8	78	65.4	69
Netherlands	15.1	15	5.8	9
New Zealand	5.7	31.5	36.4	29
Niger	61.8	73	97	88
Nigeria	33.2	68.5	80.6	75
Norway	16.9	32	14.4	17
Oman	63.3	61.5	47.4	58
Pakistan	59.5	94.5	109.8	106
Panama	22.8	27.5	28.6	23
Papua New Guinea	13.5	47.5	52.4	49
Paraguay	54.1	73.5	57.8	63
Peru	41.1	73.5	74.6	74
Philippines	52.2	80	99.8	90
Poland	88.6	127	76.8	95
Portugal	26.6	62	55.6	56
Qatar	60.4	58.5	30.2	45
Romania	107.2	136.5	120.8	133
Rwanda	78.2	108.5	101.8	109
Saudi Arabia	69	68.5	68.2	72
Senegal	27.5	45	65.4	60
Seychelles	70.1	112	114	113
Sierra Leone	37.7	57	97.2	82
Singapore	52.2	52.5	47	51
Somalia	97.7	128	129	135
South Africa	97.3	126.5	87.2	105
Soviet Union	115.1	139	142.2	144
Spain	17.9	56.5	44	47
Sri Lanka	37.1	72	76.2	71
St.Lucia	11.3	45	45.6	41
St.Vincent	11.2	47	50.6	46

Table 1. Average Rankings Based Upon Index Weights Constructed By:

Table 1. Average Rankings Based Upon Index Weights Constructed By:

Country	Mean Rank of 15 Liberty Indicators	Mean Rank of Principal Component Techniques	Mean Rank of Hedonic Models	Overall Index
Sudan	61.3	100.5	129	119
Suriname	77.1	115.5	121.8	125
Swaziland	62.2	97	120.6	111
Sweden	13.9	32.5	45.2	38
Switzerland	12.8	15	1.6	7
Syria	75.7	96.5	123.6	117
Taiwan	48.7	67.5	29	43
Tanzania	88.9	122	124.4	128
Thailand	42.3	75.5	95	85
Togo	62.9	83	100.4	94
Trinidad and Tobago	17.6	54	55.2	53
Tunisia	55.1	90	78.6	80
Turkey	64.7	102	85.8	91
Uganda	79.3	123	124.4	127
United Arab E	59	53	22.2	33
United States	1	1	7	4
Vanuatu	19	25.5	45.4	36
Venezuela	17.7	32.5	29.6	27
Vietnam	110.1	140.5	129.8	137
Yemen Arab Re	75.3	111	71.2	84
Yugoslavia	76.1	113	74	87
Zaire	72.6	106	142	134
Zambia	61.3	99	105.6	103
Zimbabwe	65.3	94	94.6	93

Principal component analysis is a method whereby we analyze how much independence there is in a group of variables. This method is discussed in Scully and Slottje (1991) and Slottje (1991), and Slottje et al. (1991). In Table 1 (column 2), we present the ranks for each country based upon their respective first principal component. This is our Index 2, denoted

RINDEX2. We only consider one component because this component contains 60% of the total variation in the attribute data and the other principal components do not have a strong economic interpretation. While this is a statistical procedure, and perhaps not an economically intuitive one, it still is instructive. It tells us that if the 15 variables are reasonable indicators of liberty, they can be combined in such a way that different combinations of them create 15 new variables which contain as much information as the original 15, but without any multicollinearity problems. If we were to rely on any one of them (say the first one) then the coefficients a_{1j} represent the weights that give maximum variance. We construct one for each country and then rank them. Thus, countries like the U.S. and Luxembourg which have relatively low attribute values and low variances across all attributes, consequently will have a small first principal component, which will rank that country first. A country with a large amount of variation across attributes and large attribute values (low levels of economic freedom) will have larger component values. As we move to higher order principal components we get different ranking results since the variance is all that is left after filtering out the first principal component.

Information about the principal components can also be used directly as weights. This is done in the construction of Index 3. We call this RINDEX3 and discuss these results in the empirical section. Also, the values of the attributes were weighted by their ranks and normalized ranks ($rank_i/max\ rank_j$) and then these were weighted by the w_i's. All of these different weighting schema were highly correlated with Index 3. The average rank associated with two major principal component techniques (an average of RINDEX2 and RINDEX3) is reported as column 2 of Table 1. The other index specifications are given in Appendix Table A.1 for the interested reader. Indexes specified in these ways for each country will reflect to varying degrees the information content from each attribute relative to other countries and the country's ranking relative to other countries, as well as account for variation in the data. Again, the correlation (over 90%) between these alternative specifications of the indexes made the reporting of these alternative indexes with these various weighting specifications redundant. The other principal component-based indexes are also defined in Appendix Table A.1.

Rankings of Economic Liberty

In constructing an overall index of economic liberty, the simplest procedure is to rank the liberty indicators, average the ranks, and then rank the average of the 15 separate economic liberty indicator ranks. This procedure can be obtained from the average ranks of column 1 in Table 1. The rankings of economic liberty by this simple method yields plausible results. Nations like the United States, Luxembourg, West Germany, Canada, and Japan rank very high, the communist block countries rank at the bottom, much of Europe is in the upper quartile of rankings, and much of Africa is in the lower quantile of rankings. Index 1 also is highly correlated with some of the other economic liberty indexes (RINDEX2 and RINDEX6), but less so with some of the others (RINDEX8).

RINDEX2 is the rank of the index based on the first principal component. RINDEX3 is the rank of the index based on the weights obtained from the first principal component multiplied by the actual values of the fifteen attributes. Average rank in Table 1 (column 2) is the average of RINDEX2 and RINDEX3. The two ranks of the indexes are correlated ($r = .81$), but not coincident. The United States ranks first by both methods. But, there are some dramatic differences for some countries (such as Bahrain, Belize, Bolivia, Botswana, Chad, Congo, Cyprus, El Salvador, Guatemala, Haiti, Iceland, India, Italy, Jamaica, Jordan, Kuwait, Lebanon, Liberia, Mexico, Portugal, Qatar, Singapore, St. Lucia, Thailand, Trinidad and Tobago, and the United Arab Emirates).

RINDEX4 is the rank of the index based on the normalized coefficient estimates multiplied by the value of the liberty indicators for the full regression model (i.e., all 15 regressors). RINDEX5 is the same as RINDEX4, except that the normalized regression coefficients are multiplied by the rank of the liberty indicator. RINDEX6 is the same as RINDEX5 except that the liberty indicators (and RGDC) have been transformed into logarithms so that the coefficients are elasticities. RINDEX7 is the same as RINDEX5 except that the regressors have been restricted to only those that were independently statistically significant (L_1 - L_3, L_6, L_{10}, L_{11}, L_{13}). RINDEX8 is the same as RINDEX7 except that ranks rather than the values of the attributes were employed in the restricted regression. While these indexes are highly correlated with each other, several of the other indexes con-

structed but not discussed here, had considerably lower correlation values. The correlation values for the indexes discussed here ranged from .7 to .99, indicating some variation. For example, the United States ranks 1 by RINDEX7 and 15 by RINDEX6, Canada ranks 1 by RINDEX1 and 19, Spain ranks 22 by RINDEX6 and 53 by RINDEX4 or RINDEX5, and so on. The overall index, is highly correlated with all of the rank indexes which is of course a consequence of its construction and provides further evidence that it is a good summary statistic of the other indexes.

Conclusions

We have constructed a number of summary indexes of economic liberty based on principal component and hedonic weighting techniques. While overall these indexes are related to each other in a statistical sense, there are sufficient differences among them to conclude that choice of the weighting technique is important in the construction of an overall index of liberty. Because the liberty indicators currently available for use are fairly coarse, the differences that these weighting techniques yield in the summary liberty indexes are understated. As research on liberty yields finer measures of the liberty indicators, the choice of the weighting technique will become more crucial in defining an overall measure of economic liberty.

Notes

[1] The data for these attributes appears in an earlier version of the paper as Appendix Table A.1 and is available for a limited period from The Fraser Institute.

[2] In an earlier version of this paper, Appendix Table A.2 ranks each country from the lowest level (more liberty) to the highest level of economic freedom for each attribute.

[3] In the earlier version of this paper, all the rank indexes are available. For reasons of space limitations, only the selected average ranks rather than each RINDEX, the weighted ranks, are presented.

[4] Indexes (RINDEX2 - RINDEX8) which were selected to be representative of all the types of weighting that were possible are available in the earlier version of this paper.

[5] Spearman correlations for all these results which demonstrates how the indexes' rankings are related to each other are available in earlier verisons of this paper.

[6] A full comparison of the country by country differences in the liberty indexes by method of weighting the liberty indicators can be discerned in earlier versions of the paper.

Appendix

Table A.1. Formulas for Constructing Indexes

Index 1 = Σ $L_i.R_i$
Where L_i is the ith liberty indicator and R_i is the ith indicator's rank.

Index 2 = Σ $L_i.\{R_i/\max R_j\}$
Where $\{R_i/\max R_j\}$ is the ith indicator's rank normalized by the maximum indicator rank.

Index 3 = Σ $L_i.R_i.\{\lambda_i/\Sigma\lambda_j\}$
Where $\{\lambda_i/\Sigma\lambda_j\}$ is the proportion of total variance in the x matrix due to the ith eigenvalue.

**Index 4 = Σ $L_i.\{\lambda_i/\Sigma\lambda_j\}$
See index 1 and index 3 for definitions of variables.

Index 5 = Σ $\{R_i/\max R_j\}\{\lambda_i/\Sigma\lambda_j\}$
See index 2 and index 4 for definitions of variables.

Index 6 = Σ $R_i.\{\lambda_i/\Sigma\lambda/j\}$
See index 1 and index 4 for definitions of variables.

Index 7 = Σ $L_i.\{\beta_i^*/\max \beta_j^*\}$
Where $\{\beta_i^*/\max \beta_i^*\}$ is the normalized coefficient estimate from $\Psi = \beta_0 + \Sigma\beta_i$ $L_i + \mu_i$ where Ψ is real gross domestic product per capita consumption share per country.

Index 8 = $\Sigma\, L_i.R_i\, \{\beta_i^*/\max\beta_j^*\}$
See index 1 and index 7 for definitions of variables.

Index 9 = $\Sigma\, \{R_i/\max R_j\}\{\beta_i^*/\max\beta_j^*\}$
See index 2 and index 7 for definitions of variables.

**Index 10 = $\Sigma\, R_i.\{\beta_i^*/\max\beta_j^*\}$
See index 1 and index 7 for definitions of variables.

**Index 11 = $\Sigma\, R_i.\{\alpha_i^*/\max\alpha_j^*\}$
The same index 7 except $Y = \alpha_0 + \Sigma\alpha_i R_i + V_i$.

**Index 12 = $\Sigma\, L_i.R_i.\{\alpha_i^*/\max\alpha_j^*\}$
See index 8 and index 11 for definitions of variables.

Index 13 = $\Sigma\, \{R_i/\max R_j\}.\{\alpha_i^*/\max\alpha_j^*\}$
See index 2 and index 11 for definitions of variables.

Index 14 = $\Sigma\, R_i.\{\alpha_i^*/\max\alpha_j^*\}$
See index 1 and index 7 for definitions of variables.

Index 15 = $\Sigma\, L_i.\omega_i^*$
Where ω_i^* is the elasticity from the model $\ln Y = A + \Sigma\omega_i \ln L_i + \Sigma_i$.

Index 16 = $\Sigma\, L_i.R_i\, \omega_i^*$
See index 1 and index 15 for definitions of the variables.

Index 17 = $\Sigma\, \{R_i/\max R_j\}.\omega_i^*$
See index 2 and index 15 for definitions of the variables.

Index 18 = $\Sigma\, L_i.\{\gamma_i^*/\max\gamma_j^*\}$
Where γ_i^* is the coefficient normalized from the model $Y = \gamma_0 + \gamma_1 L_1 + \gamma_2 L_2 + \gamma_3 L_3 + \gamma_6 L_6 + \gamma_{10} L_{10} + \gamma_{11} L_{11} + \gamma_{13} L_{13} + \mu$.

Index 19 = $\Sigma\, L_i.R_i\, \{\gamma_i^*/\max\gamma_j^*\}$
See index 1 and index 18 for definitions of the variables.

[**]Index 20 = $\Sigma L_i.\{\gamma_i^*/\max \gamma_j^*\}\{R_i/\max R_j\}$
See index 2 and index 18 for definitions of the variables.

Index 21 = $\Sigma R_i \{\gamma_i^*/\max \gamma_j^*\}$
See index 1 and index 18 for definitions of the variables.

Index 22 = $\Sigma L_i.R_i \{\delta_i^*/\max \delta_j^*\}$
Where δ_i^* is the normalized coefficient from the model
$Y = \delta_0 + \delta_1 L_1 + \delta_2 L_2 + \delta_3 L_3 + \delta_6 L_6 + \delta_{10} L_{10} + \delta_{11} L_{11} + d_{13} L_{13} + \mu.$

Index 23 = $\Sigma\{R_i/\max R_j\}.\{\delta_i^*/\max \delta_j^*\}$
See index 2 and index 22 for definitions of the variables.

Index 24 = $\Sigma R_i \{\delta_i^*/\max \delta_j^*\}$
See index 1 and index 22 for definitions of the variables.

Index 25 = $\Sigma L_i \{\delta_i^*/\max \delta_j^*\}$
See index 1 and index 22 for definitions of the variables.

[*]In Index 1 to 17 the summations are over 15. For indexes 18 to 21 they are over 7, and for 22 to 25 they are over 8.

[**]These indices are analyzed in the text above.

Table A.2. Coefficient Estimates of the Hedonic Models

$Y = *5149 - *298.95L1 + *283.17L2 - *320.32L3 + 200.6L4 + 51.53L5 - *610.94L6 - 59.24L7 + 312.66L8 - 413.31L9 - *461.05L10 + 348.75L11 - 58.07L12 + *575.85L13 - 79.19L14 - .92L15$

$\quad R^2 = .64$

$Y = *7.65 - .002R1 + *.009R2 + 0003R3 - .001R4 + .00006R5 - *.01R6 - *.005R7 + .002R8 - .002R9 - *.007R10 \ .004R11 + .001R12 + *.01R13 - .002R14$

$\quad R^2 = .65$

$\ln Y = 8.3 - .11\ln L1 + .25\ln L2 + .04\ln L3 + .03\ln L4 + .003\ln L5 - .28\ln L6 - .10\ln L7 + .10\ln L8 - .09\ln L9 - .31\ln L10 + .08\ln L11 + .008\ln L12 + .38\ln L13, - .38\ln L13 - .08\ln L14 - .04\ln L15$

$\quad R^2 = .67$

$Y = *4818 - *328.73L1 + *307.14L2 - *279.72L3 - *632.87L6 - *397.45L10 + *318.86L11 + *579.99L13$

$\quad R^2 = .62$

$Y = *3490 - *6.66R1 + *9.93R2 - *10.82R3 - *23.76R6 - *8.68R9 - *11.64R10 + *11.79R11 + *20.07R13$

$\quad R^2 = .60$

* indicates coefficient is statistically significant at the .10 level.

Y is per capita real gross domestic product times consumption share per country.

To construct hedonic models real gross domestic product per capita (RGDP) was used as an instrumental variable. Summers and Heston constructed this series. RGDP is weighted by a country's consumption share. Many countries (e.g., oil exporting) have a high RGDP, but the State "owns" a large fraction of output that is not available for private spending. Real gross domestic consumption (RGDC) was regressed against the various attributes,

(1) $$RGDC = \beta_0 + \Sigma \beta_i L_i + \varepsilon$$

where L_i is the ith liberty attribute and β_i is the coefficient estimate of the effect of L_i on RGDC. The β_i's in normalized form were used as the weights in our indexes. This index is called RINDEX4 and corresponds to Index 10 in Table A.1. These results are discussed fully in section 4 below. In another procedure the attributes L_i were replaced by the ranks of the attributes R_i,

(2) $$RGDC = \alpha_0 + \Sigma \alpha_i R_i + \varepsilon$$

where a_i is the coefficient estimate of the effect of a country's rank on its RGDC. This can be interpreted as a method of examining whether countries with low (high freedom values) liberty have high or low RGDC relative to other countries and is denoted RINDEX5 (Index 11 in Table A.1) and is calculated by multiplying the attribute by the normalized coefficient estimate from (2). We also examine the elasticities of the attributes to see how responsive each individual countries' relative RGDC is to each countries' relative economic freedom measures. This specification is the same as (1) except the variables are in natural logs,

(3) $$RGDC = \omega_0 + \Sigma \omega_i \ln L_i + \mu$$

This gives rise to RINDEX6 and corresponds to Index 16 in Table A.1 which also includes other possible weighting schemes. For example, we weight the attribute by the normalized rank. Finally, one of the indexes is based on a hybrid hedonic procedure. The procedure is a hybrid one in that the same regressions model as in (1) and (2) was used, but a stepwise procedure was employed to only include those attributes which maximize the likelihood function, or, in other words, demonstrate that they belong in the model,

subsequently implying they are the major hedonic attributes with respect to RGDC. For the Li model, these variables include economic freedom indicators 1, 2, 3, 6, 7, 8, 10, 11, 12 and 13. For the ranks (R_i) model, these factors include 1, 2, 3, 6, 8, 10, 11, 12 and 13. RINDEX7 and RINDEX8 correspond to index 20 and index 24 respectively. These are included to capture rank and normalized rank effects. While a wide spectrum of indexes were constructed for each hedonic specification, we report only the average of the hedonic indexes RINDEX4-RINDEX8 in column 3 of Table 1.[4] The underlying regression results for all of the hedonic models are given in Appendix Table A.2. All of the formulas needed to construct the various indexes are given in Appendix Table A.1. A summary was constructed by taking the average of all eight previously discussed indexes and then taking the ranking of these averages. This index is presented with all the other index rankings as a summary in the final column of Table 1.[5] We now discuss the empirical results.

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Discussion

Milton Friedman began the discussion by emphasizing two technical issues related to Table A1, the basis for the rest of the weighted results, and two conceptual issues. The technical issues hinge upon the problems associated with using category scores that range from 1 to 4 in most cases and 1 to 7 or 1 to 9 in others. In this case the weights assigned to the categories are implicitly different. The average score in the various categories will differ, and this will create different weights within the index. The rankings will be influenced by the size of the intervals. One possible way to handle this

is that if a country appears to be in the top quartile, it could receive a score of .125, within the next quartile, .375 etc. Further, the actual scores in several of the categories appears to be highly arbitrary. For example, Hong Kong with respect to L13, Freedom to Work, is given a 3 while the United States gets a 1. What is this? In what way is Hong Kong less free than the United States?

And this led to the conceptual issue that in order to gain some feeling that the measures are capturing important differences among countries, there should be some basis or benchmark for comparison. In this way those measures which are patently at odds with our common sense can be discarded. We need test cases. The comparison between the US (ranked number 1 in terms of economic freedom) and Hong Kong (ranked number 20) is one example.

Argentina and Chile is another good test case — that Argentina ranks above Chile in economic freedom is not right. Similarly, although Hong Kong ranks above Sweden, the difference, 1.27 to 1.47 is very small. Similarly one can be suspicious of a measure that puts Switzerland (1.33) just barely more economically free than Sweden.

A second conceptual problem, Friedman suggested, is that the various measures take no account of trade arrangements or the fiscal burden. Ed Crane did not like the use of the term comprehensive in the paper since it also left the nature of government ownership versus regulation out of the measures. Richard McKenzie felt that Scully and Slottje had been overly confined by using published measures of what other people felt constituted economic freedom. Instead, he argued, we must use what is important. How it is obtained is less relevant now.

At this point Scully responded by stressing that his paper tried to illustrate the effects of different weighting techniques on the calculation of potential measures of economic freedom, and that to this end he had normalized all the categories and stuck with published indexes. To that extent he was not prepared to defend any particular score in any particular category. The sensitivity of the indexes of freedom to the different weighting schemes was the focus of the paper.

Alan Reynolds suggested that to be useful in promoting economic freedom, a paper should be simple, and that rather than striving for objectivity, the notion of economic freedom should be thought of like the scores of a diving competition: judged by expert opinion, and while not

objective is nonetheless reasonably consistent. Milton Friedman responded that this was an attempt at scientific inquiry and, as such, it constitutes a search for important components of economic freedom and how they relate to other measures such as those Scully has mentioned: the GNP, quality of life, etc.

Bernard Siegan stressed that the absence or presence of the judiciary (another index) does not mean that economic freedoms are less or greater. The actual role of the judiciary, on the one hand enforcing confiscatory taxation, or on the other protecting economic liberties, is not picked-up in any measures. This led Charles Murray to wonder which of the indexes hung together, and which appeared to be measuring different things. Scully responded that perhaps eight of the indexes were independent.

Walter Block argued that the issue of weights to be put on the sub-indexes was overly detailed. He averred that using one's own introspective tastes to weight the indexes was as acceptable as some arbitrary criterion of variance weights. In contrast to the "high-tech" strategy of Scully and others, a "low-tech" strategy would be simply to add-up the indexes with equal weights. Jack Carr pointed out that the criterion for adequate weighting depended upon the purpose to which the indexes were to be put. Like the definition of money as M1 or M2, the question is not independent of use.

Carr stressed that some income maximization would appear to be both desirable and consistent with the basic perspective of economic behaviour. In this respect the hedonic weighting scheme looked better than the others. Stephen Easton then remarked that the optimal tariff raises domestic income, but according to some measures, reduces economic freedom. Carr responded that from a global perspective, there is a net income loss, and further something beyond a gut feeling is needed to establish the relevant weights in any index. He argued that a definition that maximizes economic well-being is appropriate so that greater economic freedom means greater economic benefit. James Gwartney remarked that this was the same basis for the use of GNP as a summary indicator of economic well-being. GNP tends to rise when most good things are increasing and tends to fall when times appear to be bad. As a more specific remark directed toward the paper, he wondered why inflation was not included as an indicator of the loss in economic freedom as it interrupted the execution of private contracts. Juan Bendfeldt remarked that indexes are better when used to

compare one year to the next, and Scully and Slottje amalgamated data from several years into one index. Scully responded that while the desire to use a ("low-tech") counting exercise to identify indexes of economic freedom is more simple, it is also open to individual biases. A "high-tech" methodology is more useful as the methodology for the derivation of the weights is clearly apparent.

Milton and Rose Friedman's Experiment

[Editor's note: At the end of the first day of the Sea Ranch Conference (the second in the series reported in this volume), Milton and Rose Friedman proposed the following experiment. This is reported in a slightly different fashion since it was not a written document as a formal part of the series. We have tried to capture the sense of the presentation as well as the occasion without actually transcribing the proceedings.]

IN REVIEWING THE PAPERS, ROSE and I have had difficulty making sense of the different measures in the large number of countries. We have taken eleven countries about which we feel we know something and would ask you [the conference participants] to rank these countries from the most free to least free. We will tabulate the results tomorrow. One conclusion we have reached is that we are studying too many countries.

[One Day Later]

In the handout there is a tabulation which summarizes the results of the survey. In the results for the eleven countries which we know relatively well, we have provided an average, a standard deviation, the range and the maximum and minimum values of the rankings made by the 23 people at the conference. In each case 1 equals the greatest economic freedom and 11 the least. Every country was ranked by each person. In addition we have provided the rankings where possible by the indexes from Gwartney, Block and Lawson, by Easton's measures, and by Spindler and Miyake's HMF

ranks. It is fascinating that there is both a great deal of agreement and considerable disagreement. The greatest agreement was on Hong Kong which everyone but one person ranked as 1 and that person ranked as 2. The United States had one 1, and three 3's and all the others ranked it as 2. Beyond that there is roughly the same amount of dispersion which is fairly moderate. The greatest dispersion is for Chile which is understandable given recent history. But if you look at the standard deviations and means, except for Hong Kong and the United States as the most economically free, and India, Israel, and Sweden as the least free, there is little to distinguish the intermediate countries.

If you look at the Gwartney ranking of his number 1, the ranking is not that different. Chile and India were a bit out of line. The right way to do this is to send surveys to people who know something about these countries, people who live there—almost everyone here is from the United States or Canada (and we should have put Canada in this). Looking at the Easton list, F1 seems way out of line as India ranks so high. The key thing to know in the cardinal approach is that what you call economic freedom or utility or whatever, is the numerical measure however you choose to construct it. You use a set of specified steps. The useful thing in the Jones-Stockman paper is the steps that they set out to define economic freedom. Many people object to the results of this kind of methodology. Indeed, as Stockman has suggested, the use of government expenditures as a fraction of income is an application of their kind of methodology, and we find that it doesn't give very good results. It is fine for the developed countries, but none of us here will accept the fact that by that measure all underdeveloped countries will be freer than developed countries. The test of whether we have a good measure is that it "works" and gives you results that you like. As I heard Fermi once say, the concept of length may be a good measure on earth, but it may be useless on the surface of the sun. The results that appear in F1 are very important from that point of view since they expose a defect. Easton's F2 is much better from this perspective. It has Japan as 1 and France as 2 and the U.S. as 3, and Sweden comes in last. Looking at the "HMF-homework" averages, the main thing that comes out is that these measures give you no discrimination. That doesn't mean that there are not some good ones among them, but as an average they are not very helpful.

Rank of the following countries in accordance with their level of economic freedom in accordance with measurements of indicted authors.

(1 = greatest economic freedom, 11 = least)

Country	GB Lint 1+2	Easton F1	Easton f2/gdp	HMF 7	HMF 10	HMF 23-2	HMF 9a	HMF 18	HMF 5	HMF 15-1	HMF 20	HMF 1	HMF 12	HMF 21	Count	Average	Rank of Average
Australia	9	6	4.5	3	3	7	5	4	5	1	8	6.5		5	13	5.15	8
Chile	7				2		6		3				8	10	6	6.00	9
France	8	3	2		5	3	8	5	6	4	3	5	6	8	13	5.08	6
Germany	5	4	4.5	4	7	4		7		5	2	6.5	7	2	12	4.83	5
Hong Kong	1							3	1				5	9	5	3.80	3
India	4	2	6.5	1	1	1	1				9		9	7	10	4.15	4
Israel	11			2	9		3				7		4	11	7	6.71	11
Japan	2	1	1			2	2	8	2		5	2	2	1	11	2.55	1
Sweden	10	8	8	7	8	8	9	1		6	4	3.5		6	12	6.46	18
United Kingdom	6	7	6.5	6	6	6	7	6	7	3	1	3.5	3	4	14	5.14	7
United States	3	5	3	5	4	5	4	2	4	2	6	1	1	3	14	3.43	2